

**DIVIDED DREAMS ON LIMITED LAND:
CULTURAL EXPERIENCES OF AGRICULTURAL BIO-ENERGY PROJECT
AND ORGANIC FARMING TRANSITION IN TAIWAN**

by

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Submitted to the Graduate Faculty of
Kenneth P. Dietrich School of Arts and Sciences in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy

University of Pittsburgh

2012

UNIVERSITY OF PITTSBURGH

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This dissertation study is based on historical comparison and analytical ethnography on contemporary projects between a Han Chinese farming community engaging in an energy crop cultivation project and an indigenous Amis community practicing organic farming in Taiwan. My main argument is that Han Chinese and indigenous Amis farmers have developed different "environmental identities" based on differing historical memories, political economy, and cultural practices as they have responded to past events and contemporary state policies. Han Chinese farmers have engaged in large-scale collective farming which has equipped them with the ability to consider farming as a scientific operation driven primarily by market values. For Amis, difficulty of access to state resources and changing attitudes towards traditional farming knowledge has led to organic farming as a new path for their engagement with the environment. A key factor for understanding these environmental identities, I argue, is disparate exposure to technological treatments of the environment and divergent concepts on property. Further exploration of environmental and empowering discourses on the transitions reveals that engagement and reflection over new projects have to be affective in order to be effective. The affective qualities not only reveal empowering dynamics for individual interpretations, but also the characteristics of supply chain capitalism in the scale of energy crop project and model thinking of organic farming project. Environmental identities are constructed via political,

historical, and culturally immersed practices. The comparison shows several aspects where the results of the two cases can be potentially reversed with culturally elaborated experiences in the application of innovative technologies within problematic policies.

The ethnographic fieldwork was conducted in two rural communities of Taiwan: a Han Chinese community at Xue-Jia, Tainan County, and an indigenous Amis community at Talampo, Hualien County. Each work lasted for eight months continuously, and four months intermittently later on, from July of 2008 to December of 2009. Interviews were also done with visiting agricultural research institutes and extensions for officials and specialists of various levels. The historical backgrounds were drawn from studies and archives of national university departments of agricultural extension and Council of Agriculture as references.

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PREFACE

Acknowledgements

It seems that my acknowledgements could have been written for several times during the course of study since I actually changed the focus of my research in the working process (who didn't?); now the page is finally turned into its reality. This dissertation is the result of mentorships, friendships and research and teaching activities over a decade. I am grateful to all the people who have helped me in making this dissertation come true, and also to the land that carries divided dreams I have loved and been thinking of while studying abroad—Ilha Formosa, Taiwan.

My research received financial support from different resources and institutions throughout the course of the two years that I conducted fieldwork and collected archival materials. I was awarded a doctoral student fellowship from Institute of Ethnology, Academia Sinica, Taiwan, under the supervision of Academician Shu-min Huang. Travel grants provided by the Department of Anthropology, Asian Studies Center, and the Indo-Pacific Council at the University of Pittsburgh are also critical to the formation of this research. I am also grateful to Pei-yi Guo who provided research assistantship so that I can start writing and delving into fieldnotes after my physical field stay. My graduate school career was made possible and an enjoyable academic life with the constant guidance and support of my advisors, Rich Scaglione and Andrew J. Strathern: Thank you for your mentorship and tolerance. Special thank to the friendship and intellectual stimuli from La Famiglia, in which Rich and Mariauxi is the center. I really appreciate your help! Thank you, of course, to my committee members: Richard Scaglione, Andrew Strathern, Joseph Alter, and Andrew Weintraub. I am also grateful to the faculty

members in the Department of Anthropology and from different institutions, who have encouraged my work and provided great inspirations: Nicole Constable, Keith Brown, Bob Hayden, Gabi Lukacs, Bell Yung, Katy Carlitz, and Pamela Stewart. I want to further extend my gratefulness to Michael Stanley-Baker and Jennifer Cash: Thank you for your friendship and all the laughs along the road of academic life. Thanks to Phyllis, Donna, Linda, and Lynn who made everyday life in academic environment possible.

In Taiwan, I have been greatly supported by teachers, friends, and informants from different places. I want to thank my supervisor and mentor of the Doctoral Research Improvement Fellowship at Institute of Ethnology, Dr. Shu-min Huang, as well as Research Fellows Tai-li Hu, Pi-chen Liu, An-bang Yu, Shoa-hua Liu, and Pei-yi Guo. In Xue-Jia, Tainan, I was warmly hosted by Bun-chuan and his wife, master Hon-bo and his wife, and former Director of Tainan Agricultural Research Extension Dr. Shan-nei Huang. In Talampo, Hualien, I had the great pleasure to learn from and live with fagi (uncle) Butal and Banai, as well as kaka (brother) Adop, Sawma, Amin, and Kacaw. Particularly, I want to thank Pastor Patal and her husband Hani of Talampo Presbyterian Church, for their support and undifferentiated love to a Bailan! Ms. Mei-mao Wu, the organizer of the indigenous organic agriculture platform, is an idealist who tried hard to make everything possible; I thank her for her pioneer work. In the occasions of learning, joking, and mutual support, I thank Mrs. Shu-te Huang and Homemaker's Union Cooperative, Pei-hui Tsai and Taiwan Rural Front; Futuru Tsai, Aits Huang, Matt West, Chi-wei Liu, Rong-bang Peng, and Ang Luteng for all of your great inspiration from our discussions. I also want to thank Yi-ren Lin and Yen-lin Tsai for organizing the discussion forum on indigenous ecology, and especially to the discussant Prof. Anna Tsing. The basic comparative structure of this dissertation was shaped during the forum hosted in another "Dark

Tribe,” Smagus of the Atayal in Hsin-chu. I thank all the farmer friends who I cannot name directly here but have taught me to care about the land, the people, and life.

Finally, I want to thank my cohorts in the Department of Anthropology who have been so supportive throughout the years of graduate study: Megan, Rory, Dan, Narcis, Joe, Penelope, and Annie. Also to the Taiwanese gangs, Haoli, Shih-Hsian, and Rita for your help; to Becky, Greg, Laura and Lisa for your intellectual challenges and hearty support. I also thank Lisa for her editorial work. My last but never the least thank goes to my dear family. Dad has set the model for a great nature lover and a scholar, and mom provides every encouragement through the prayers over international phone calls. To my wife, Nell, for her enduring love and continuous belief; I cannot thank you enough. I want to dedicate this dissertation to my grandfather, Mr. Wen-Tsang Su and my advisor of the Master Program at NDHU, Dr. Der-Huey Yee, who passed away in the beginning and the end of my doctoral studies. Following your models, I just start to learn how to be a good father and a devoted scholar. Thank you.

Editorial notes on linguistic notion in the dissertation

Twenty-six of the 82 interviews were conducted in Amis, and the rest in mandarin. I have translated fifty-three of them into English and rest in general notes taking. I italicize the words only the first time it is used, and thereafter I use normal font. The Amis Romanization is following the spelling system of Amis Church in Taiwan, standardized by Miss Virginia A. Fey. Pseudonyms are used for informants by changing the orders of their actual identities. All photos and tables in the work were taken and made by the author unless otherwise noted.

0.0 INTRODUCTION

This dissertation study is an ethnographic research on historical transition between a Han Chinese farming community engaging in an energy crop cultivation project and an indigenous Amis community practicing organic farming. Through investigation of cultural traditions and historical studies of interactions with agricultural specialists, I examine how these two groups' differing conceptualizations of the environment have been shaped. My main argument is that Han Chinese and indigenous Amis farmers have developed different "environmental identities" based on differing historical memories and cultural traditions as they have responded to past events and contemporary state policies. Han Chinese farmers have engaged in large-scale collective farming which has equipped them with the ability to consider farming as a scientific operation driven primarily by marked values. For Amis, difficulty in accessing state resources and changing attitudes towards traditional farming knowledge have led to organic farming as a new path for their engagement with the environment. A key factor for understanding these environmental identities, I argue, is disparate exposure to technological treatments of the environment. Further exploration of environmental and empowering discourses on these transitions reveals that engagement and reflection over new projects have to be affective in order to be effective. The affective qualities in appropriating new initiatives not only provide empowering dynamics for communities but also unveil inalienable nexus with the assembled policies.

0.1 RESEARCH BACKGROUND

The ethnographical fieldwork was conducted in two rural communities of Taiwan: a Han Chinese community at Xuejia, Tainan County (shown in Map 0-1), and an Amis community at Talampo, Hualien County (shown in Map 0-2). Each work lasted for eight months respectively, and four months intermittently later on, from July of 2008 to December of 2009. Xuejia was chosen for its intensive involvement with governmental agricultural projects since the colonial and postwar era, and Talampo was chosen because it is the first indigenous community practicing massive range of organic certified farming. Fieldwork was conducted through participant-observation while living in the two communities, paying specific attention to interactions between farmers and agricultural specialists. My part time job as project manager in a newly formed biofuel venture capital company from July 2007 to June 2008 facilitated my understanding and exposure to state policies and global trading issues related to biofuels during the heyday of biofuel experiment in Taiwan. Interviews were also done during visits to agricultural research institutes and extensions with officials and specialists of various levels. The historical backgrounds were drawn from studies and archives from Department of Agricultural Development in National Taiwan and National Chun-Hsin University and the Council of Agriculture as references.

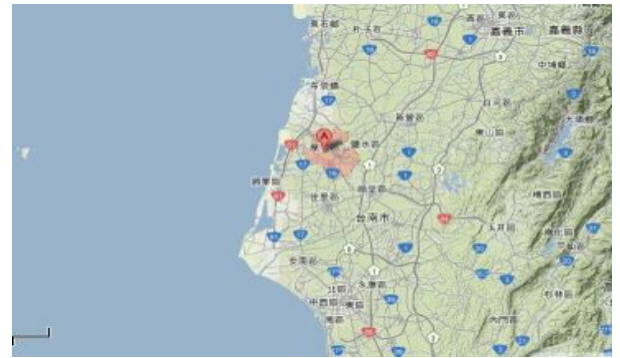


Figure 1: Location of Tainan (left) and Xue-Jia (right)



Figure 2: Location of Hualien (left) and Talampo (right)

Taiwan occupies a geographical location in the coastal part of Southeast Asia and includes arable areas with sub-tropical and tropical agricultural resources. From Japanese colonial period (1895-1945) to date, agricultural practice and research has been a driving force for industrial development, first for the colonial regime and then serving the newly developed island country. Because of its limited land mass and dense population, Taiwan's agricultural policies and researches have been carefully planned and developed in order to satisfy local needs. As a limited island-based country, energy and food are two things Taiwan cannot afford to lose. Nevertheless, Taiwan has a historical background of connecting agricultural reformation with the

energy industry. During the Japanese colonial period, the sugarcane industry in Taiwan was greatly developed by colonial officials in order to satisfy Japan's domestic consumption and reduce its dependence on the imported sugar. Ethanol was produced from sugarcane in the end of the WWII to support the needs of the Japanese military under the embargo imposed by the Allies. After wartime, the sugarcane production was gradually yielded to rice farming in Taiwan. In the 1970s, some super productive sugarcane seedlings were even brought by Taiwanese researchers and businessman in response to burgeoning Brazilian ethanol production during the oil crisis for pilot experiments.

As a traditional farming region, the competition between rice and sugarcane production in Taiwan since the colonial period has been connected to multiple concerns of leveraging the exportation market to Japan, industrial transition for domestic preparation, and administrative control over the colony (Ka 1987). The competition was partially extended when Taiwan was ceded to the KMT government after WWII. Massive agricultural reformation followed by the redistribution of land ownership shows that the new regime needed to take control over local farmers. Land reformation resulted in farm fragmentation by which private land capitals became far less powerful than the government sector. For the sake of developing new industries, the KMT government started transferring agricultural investment into the industrial sector (Lee 1971). This intersection of capital flow has also constituted the framework of Taiwan's energy consumption, in which the amount of electricity and water designated for industrial usage has been much more, but cheaper in price, than that designated for domestic or agricultural use. Farmers are forced to limit their water usage and develop strategies adapting policies while observing the traditional almanac. In contrast, the recent trend of organic farming is trying an alternative approach, moving away from mass production and energy input. The materials

applied are usually recycled and acquired from nature rather than using chemicals and fertilizers from industries.

The agricultural environment and the engaged population, on the other side of the spectrum of production, are falling into dire situation. According to the statistics of the Council of Agriculture, the food self-sufficiency ratio in Taiwan has dropped from 125% in 1960, in the years following WWII, to 72% in 1971, when US corn feed for cattle started to poured into Taiwan, to as low as 32% in 2009 as indicated by the most recent figure (COA 2009).¹ Another problem is the extensive application of petrochemical pesticides and herbicides. According to the Environmental Sustainability Index 2005 (ESI) published by Yale University and the World Economic Forum, the consumption of agricultural petrochemicals in Taiwan was rated number one in the world with 47.33 kg per hectare in 2005, far surpassing Costa Rica, which was ranked second with 20.40 kg!² Since 2001 (and traced back to 1994 for the preparation for such a step), due to the policy accommodating Taiwan's new admission into the WTO, the agricultural sector announced the farmland set-aside subsidy/premium policy³ (農田休耕補貼條例) so that farms of less productivity were encouraged to be left idle and farmers could get roughly 4,500 NTD (about 150 USD) per fen⁴ in a cultivation season. Generally for a farmland with two harvest seasons, farmers who owns (but do not lease or actually maintain the land) roughly one hectare of farmland could earn 90,000 NTD (about 3000 USD) if they agreed to set the farm aside and

1 <http://www.twfact.org/index.php/檔案:各國糧食自給率 1961-2003.png>

2 The US consumed 2.30 kg, and China 0.77 kg per hectare in 2005. The average of consumption of countries throughout the world was 3.12 kg. See Index 32 in Appendix C listed in the following document.
http://www.yale.edu/esi/c_variableprofiles.pdf

3 The official title of the policy is translated as "Paddies and Dry Farms Multi-function Adjustment Project (水旱田利用調整計畫). However, it is such an embellished name that even agro-economists use "set-aside premium project" instead.

4 "Fen" 分 is a Taiwanese area mass adapted since the Dutch colonial time in 1650s. 10 fen units equal into one "Jia" 甲, which is roughly equal to 0.97 hectare.

apply only green manure, based on the subsidy policy. Therefore, this is the scene we find in the agricultural landscape of contemporary Taiwan: massive amounts of set-aside farmlands on the one hand and the cultivation of farmland overdosed with petrochemicals on the other. The governmental agricultural sector and officials are under massive attack over their incapability of managing agricultural problems, however, the structural issues that have resulted in this conundrum cannot be easily resolved and most of time the agricultural officials are tight with their hands and means in changing the status quo.

Two approaches have been promoted in order to redress the problems of chemical overuse and resources wasted by idle farmlands in recent years. The first one is to view nature as being capable of nourishing itself and produce better agricultural products than applying artificial supplements, once referred to as “bio-dynamic agriculture” by Rudolf Steiner (Guthman 2004), the recent trend of organic farming.⁵ Organic farming was introduced to Taiwan in the early 1980s by several visionary agronomists, including Drs. Hsieh Shun-jin and Huang Shan-nei (Wu 2006). They were the first few professionals who were inspired by the newly reflective trend of Japanese “teikei” (提攜) community supported agriculture (CSA) and research on organic agriculture in the US after the long and devastating green revolution era. Another approach is to revitalize the idle farms set-aside and the particular application in the latest wave has been to transform set-aside farms into energy crop cultivation areas. Turning agrarian crops into energy production crops is not a novel application of agriculture and can be dated back to the mid-1970s during the first oil crisis (Hsieh 1989). However, this study does not attempt to portray a historical painting or comparison of the stages or cases of the two

⁵ The approach of organic agriculture has later been combined with different economic, social and cultural incentives, spurring terms such as alternative agriculture, permanent agriculture, sustainable agriculture, and community supported agriculture. See Guthman for further explanations of different definitions (2004: 219-20).

approaches. Instead, the focus of this study is to take these two cases as reflections of contemporary agro-technological and environmental thinking in Taiwan, and to show that the seemingly diverse themes actually revealing conceptual parallels such as labor-affect, property-knowledge, and identity-network in anthropological discussion in the realm of agricultural practices.

0.2 DISSERTATION STRUCTURE AND MAIN THEMES

This dissertation is divided into six chapters, and each chapter serves a particular character and function within the overall thesis. The First Chapter explains my intension to conduct a comparative research of two ethnically and economically different agricultural communities. By giving the reason for such a comparison, I also intend to show the relatedness of different agricultural communities under Taiwan's environmental changes and biotechnological networking as a whole. This chapter also delineates the theoretical background of my fieldwork and further explores the issues of agrarian, environmental and affective studies. Chapter Two is a historical review on the agricultural production and transitions of policies from the Japanese colonial period, through the Post-War reconstruction institute called the Sino-American Joint Commission of Rural Revitalization, and up to late 1980s when policy for setting aside farmlands started to produce problems of massive areas of cultivatable farmlands left out of use. The transition of research foci from sugarcane to rice at the central level of agricultural research also provides a background story for the contemporary choice of biofuel technology as the driver of a revitalization project.

Chapter Three introduces and discusses my first ethnographic case study: the bioenergy crop cultivation in the Han Chinese community of Xue-Jia, Tainan. My discussion in this chapter is centered on the regional lineage and religious activities at the center for farmers' lives in the suburban community. Taking the Ong family as my major informants for discussion, this chapter aims to portray the transition of the life-history within a farmer's family, as well as the changes of technological and economic initiatives for a draught land based farming community required heavy irrigation. The later discussion in this chapter introduces the dependent but intense relationship among farmers, agricultural research extension professionals, and farmers' association representatives in order to show the problematic policy making process. My discussion in this chapter also delves into the tension between thinking about the “spiritual environment” and its relation to rational thinking about income calculation by the Han farming families.

Chapter Four is an ethnographic sketch of the other case study, focusing on the organic transition of daylily planting in the Ciharaay valley by the Talampo Amis. This chapter reviews the land rights conflict among indigenous Amis, Han immigrants, and the government over the traditional territory of the Talampo Amis. My main discussion in this chapter addresses issues related to the landscape, aesthetics, and political economy around the daylily-planting hill. By describing the life stories of repatriated indigenous farmers and their current organization for organic transition, this chapter expands the notion of indigeneity and labor to the setting of organic farming regulations. In the end of this chapter, I discuss the notion of “affective labor” in the context of branding indigenous labor and self-actualization difficulties.

In Chapter Five, I review both cases in order to show the interconnection and transformation of the concepts of labor, knowledge, and property. The main thesis is to explain

the transition from land-attached to labor-invested property, and finally knowledge-based, alienated property in both of the two cases. I use the concept of “rhizomatic agency” to describe how the case of Talampo Amis rediscover their traditional worlding, in comparison to the hierarchical “root”-oriented worlding of the Han Chinese knowledge-based transition. This chapter also discusses the framing of nature and community in the two cases, which provide a further reflection on the appreciation of environment and acceptance to the newly initiated technology.

The last chapter, Chapter Six, opens up with the issue of rural nostalgia and subjectivity by investigating the sentiments for disappearing irrigation canals and land grabbing of the government. In both the cases of the Han Chinese and indigenous Amis, the issues of water and land become common challenges to farmers in the contemporary environment. My further interpretation goes back to the comparison of materials and different perceptions in the environmental change, especially in relation to weeds in the eyes of the Han and Amis. For the Han Chinese, weeds in the field are the sign of laziness, and ineradicable trouble that needs further skill and technology to deal with. However, to the Amis, weeds are the species they have lived with for their survival in the wild, as well as a sign for resistance to the dominant political condition. In the end of the chapter, I also summarize my previous discussions of the two cases by pointing out three major themes: the gift economy within state policy, regional assemblages through virtualism, and biocapital as common goods.

My conclusion suggests that the Amis organic transition seems to be a “successful” case based on their alternative gift economy among the empowering agents, as well as an expansion of the supply chain in and of itself. However, the Han Chinese bioenergy project seems to be “failed” due to the lack of sustainable reciprocity and a disconnection of the supply chain formed

within the regional villages. Environmental identities, as I propose for the sake of comparison, are certainly constructed via political, historical, and culturally immersed practices. Nevertheless, these two comparisons NEVER intended to be ethnically essentialized, but rather reveal what is contextualized within the communities with the conditions explained. The comparison shows several aspects where the results of the two cases can be potentially reversed, and the critical notion is to read along the culturally elaborated experiences in the application of innovative technologies within problematic policies.

1.0 CHAPTER ONE: ENVIRONMENTAL IDENTITIES, AFFECTS WITHIN BIOTECHNOLOGY, AND THE WORK OF ANTHROPOLOGY

1.1 A RICE BOMB TERRORIST, INVISIBLE FARMERS, AND APPLIED BIOTECHNOLOGY

On November 23rd, 2004, an unexpected social event shocked Taiwanese society: Yang Ru-men, a young man just off-listed from his obligatory military service, put seventeen unexploded self-made “bombs” in the Taipei municipal area. Although the bombs did not hurt anyone, the “bomber’s” testimony was so simple that none of the police believed him to be the real “terrorist”: he claimed that the bomb threats intended to challenge the public indifference toward farmers and unfriendly agricultural policies after Taiwan joined the WTO, leaving farmers poorer and exploited. After being arrested and serving in prison for two years, Yang was released and then constantly visited farmers to elicit their opinions. In the summer of 2008, the first farmers market without the government’s subsidy opened in an alley in the most expensive neighborhood of Taipei. Organized by Mr. Yang, the “248 Farmers Market” has become the place for consumers in Taipei to find the most “farmer friendly” agricultural products. He also holds a visiting lectureship at Wen-Shan Community College on teaching the course of “Threefold Issues of Agriculture—Land, Farmers, and Rural Communities,” which I had the chance to attend. His story proposed some questions for students to reflect upon: how

did a rice-bomb “terrorist” become a welcomed organizer of the self-initiated farmers market? How do we reconcile the two conflicting images?

The double images of Mr. Yang may also be considered a reflection of contemporary agricultural condition in Taiwan. Taiwan’s agricultural research institutes and governmental extensions have been praised for their crossbreeding technology and persistent innovation, and have had great achievements in promoting a variety of valuable agricultural products, especially fruits and vegetables. However, the success on the improvement of “taste” and “appearance” of agricultural products have been achieved with the price of institutional neglect on the labor of the agricultural sector and an impact on natural condition by overproduction, such as aging and low income of farmers and over-application of agricultural chemicals. The drawbacks of such neglect result in two structural issues, the growing landmass of arable land under the set-aside policy as well as the deterioration of environment conditions. Farming scale has been very significantly changed by mechanized production; local farmers are even more exploited by market prices and middleman through wholesale prices. As a result, following state policies, farmlands are put into fallow with set-aside subsidies and younger farmers are involuntarily forced to leave their villages while those who stay become “invisible” since most of them are part-time farmers and part-time workers. On the one hand, the input to agricultural land relies heavily on subsidies, and the agricultural working force is aging. On the other hand, scientists consider the development of agricultural technology to be the savior to dilapidated agricultural practices, and the government vigorously promotes these practices on the frontline. The application of agricultural biotechnology, based on a new nexus of scientific development and global investment, is filling the gap of agricultural initiatives left by first level farming activities. However, the two aspects do not meet each other’s prospects via state policies, since

reconciliation between scientific techniques and cultural concepts of ecological knowledge is not easily claimed. Is the practice of agriculture in contemporary Taiwan torn apart by these two polemic developments? How do farmers relate to the new environmental imaginations when biotechnological initiatives claim to help in new applications of crops and new approaches toward land management? How, on the other hand, do agricultural specialists develop their interests and discourses of application differently than farmers? In this study, comparative views of farming landscapes, affects and labors, the concept of property, and interpretation of nostalgic memories from two cultural communities will be explored in the effort to transform the application and outlook of environmentally oriented policies.

My research centers on the following questions: How does agricultural practice reflect concern for environmental changes while the environment is also constructed via the needs of human consumption? What constitutes contemporary agricultural transformation within the island-based environment, and how are farmers reacting to their limited resources as they are framed under different agendas of agricultural revitalization and biotech innovations? This study argues that scientific utilization and environmental initiatives are contested resources and new forms of governance in agriculture. Through this dissertation research, I also stress the importance between technology and affect. Different “actants” have engaged in networking through the application of new technologies and environmental initiatives. However, it is through the notion of affect and the revealing of identities via expressive works along with technologies that allow us to find the reasons why certain projects succeed and others fail.

The contested resources referred here are not only crop production or land management for plantation, but also negotiation among policies, technology, and farming experiences. My aim is to consider the interaction and networking of these two fields by three connected

questions. First, this study is concerned about how farmers are mobilized to engage with the environment in relation to new plantation policy; I pay special attention to the formation of material networks via communication between farmers and specialists. Second, based on the diversity of energy crop plantations and organic farming, I explore how organic farming and biochemical technologies perceive “nature” differently and compete for recognition of their properties, as production resources and collective holding at the same time. Third, by considering embodied farming experiences as the vehicle of local science and lab operation as the measure of global science, I examine the problematic gapping of local/global knowledge and awareness about local agricultural problems which reflect and yet are differentiated from global concerns about environmental issues. This study will revisit the notion of natural environment and practical resources with theoretical reflection on “scale” and “translation.” It will also consider cross-field applications as means of “community formation.” By examining the emergence of organic and energy-oriented agricultural practices, and minding of global-local encountering, this study engages in closer dialogue among anthropological approaches in agrarian study, science and technology, and environmental studies.

1.2 ENVIRONMENTAL IDENTITIES AND AFFECTIVE INVESTMENT

This study explores contemporary agricultural projects related energy crop plantation and organic farming based on governmental/communal initiatives and negotiating and evaluating of knowledge through participation in the field. Agricultural experiences are historically embedded and culturally informed. While the newly imposed organic and technological investments are engaged, the practice may result in diverse definitions of sustainability, and furthermore create

new arena for identity negotiation with environmental concerns. Such “environmental identities” are situated in local experiences and contest globally tempered knowledge. In both cases, I framed the contestation of knowledge into the dyads of “ground vs. figure” and “resources vs. wastes” as in agricultural materials and scientific applications. My research aims to discuss different usages of properties engaging with the notion of “biocapital” as identities reflect the affective quality of labor in reaction to policies and technologies. By looking at the ways in which agricultural transformation, the environmental movement, and biotechnological innovation relate to one another in this emerging arena, I argue, we can better understand the impact and responses that “new energy” brings to the “old field.”

The comparison interrogates two critical issues into the study of agricultural development. First, what does farming work mean to farmers of different cultural backgrounds with the increasing importance of environmental initiatives in recent years? Second, how do farmers of different cultural backgrounds evaluate agricultural technologies? This study explores the emerging field of environmental anthropology by examining the dialectic between traditional ecological knowledge (TEK) and state policies. New environmental identities are shaped by historical events and technological introductions as culturally specified trajectories. In a practical sense, they indicate why an understanding of historical memories and cultural meanings of technology are crucial to successful development efforts.

How is environmental identity connected with affective investment? This connection was originally identified as the recognition of property as common property in a social group based on family or lineage ownership (Zerner 2008, Tsing 2008). As colonialism and modernization changed the use of property under common agreement among community members or neighboring groups, the loss of control over land and tradition has resulted in affective and

retrospective identity as well as actions in order to revitalize the landscape lost. Karl Polanyi (1957) coined the idea of “great transformation” in the era of the rising free market. Derived further from the differences between two environmental identities or citizenship, the second theme in this comparative study not only offers a subjective description of the cultural understanding of environment, but more profoundly delves into affective qualities of economic and social transformation in the shifting of agricultural practice. William Mazzarella offers the following statement about the affective structure of social changes, “all social projects if not forced though, have to *be affective in order to be effective*” (Mazzarella 2009: 157, emphasis added). Different perceptions as well as results of agricultural revitalization projects are also possible under the recognition of underlying affective structure. For the case of indigenous Amis farmers, their affective investment is reflected in the review and acceptance of the change via governmental or institutional change.

In the colonial period, the transition of agricultural practice was mostly designed in accordance with the agenda of the colonial administration. The awe and admiration of the new skills in agricultural professional schools, as well as the labor forced by police officers and administrators, both drew the young farmers and agricultural students at the turn of century to experience affective transition due to the enormous change of production. The change, as Karl Polanyi called it, was a “Great Transformation” since the traditional household economy shifted to dependency on the commercial economy. Polanyi argued that the fast growth and particularity of the market in Western society resulted in the destruction of the traditional family unit and the alternative of reciprocity, which existed prior to the free market (Polanyi 1951). Recent environmental awareness has triggered another change to the whole world: the double awareness of sustainability as the nexus of agriculture and environment. On the one hand, the

production of food increases based on the needs of the growing population and the affordable consumption of development; nevertheless, the pressure of production results in the overdose of chemicals in agricultural sectors such as herbicides and pesticides, therefore, deteriorating the environment through the development of agricultural production. On the other hand, the transition of agricultural production means local farmers are “deskilled” (Stone 2007) from their traditional practices and therefore devastates the structure of rural subsistence. There are two aspects to be further considered when reviewing the structure of rural subsistence. The first issue is about the common good, which relates to the new reflection on “the tragedy of the commons” (Ostorn 2005). The second issue has to do with the convergence of local and global knowledge (Sillitoe 2007). These two aspects constitute the conflicts and request for alternative in contemporary agricultural practice.

In the following section, I review theoretical discussions of the three domains of interests guiding this study: First, historical development of ecological and environmental anthropology; second, key issues of agrarian studies and debates with the rise of biotechnology; and third, reflection on identity and community through affective engagement. Take apart, these three aspects may seem irrelevant, but together, they provide intellectual fuel for the understanding of the contemporary transformation of agricultural practice as well as a “trading zone” for the recognition of commons over environmental initiatives.

1.3 THEORETICAL SETTING I: ANTHROPOLOGICAL APPROACH ON ECOLOGY AND TRADITIONAL KNOWLEDGE

Even though the term “ecological anthropology” was firstly proposed by Andrew Vayda and Roy Rappaport, the early figures who set the corner stone of this branch of anthropology were Julian Steward and Leslie White. Steward specifies three steps in the investigation of the cultural ecology of a society: 1) describing the natural resources and the technology used to extract and process them; 2) outlining the social organization of work for these subsistence and economic activities; 3) tracing the influences of these two phenomena on other aspects of culture. Leslie White’s principal preoccupation is with the process of general evolution, and he is best known for his strict materialist approach. He believes that the evolution of culture increases as energy consumed per capita (a rather early perspective of anthropology and energy technology). White has described a process of universal evolution, in which all cultures of the earth evolve along a certain course. White also subscribes to a technological determinism, with technology ultimately determining the way people think (Dove and Carpenter 2008: 10).

Roy Rappaport is responsible for bringing ecology and structural functionalism together. Rappaport defined and is included in the paradigm of neo-functionalism. He sees culture as the function of an ecosystem. Carrying capacity and energy expenditure were central themes in Rappaport’s studies, *Pigs for the Ancestors* (Rappaport 1968). He is also important in bringing cognitive and ideational aspects into material-based perspective of cultural ecology, extending the discussion on how cybernetic homeostasis can be reached by structural design in a particular culture. Andrew Vayda argues for the concept of human ecology instead of cultural ecology. He criticizes the teleology and other excesses of systems-based human ecology, arguing instead for an agent-based approach. The focus on people’s interpretation of their action, rather than

predominantly the deeds over environment, is brought back onto the stage. Vayda also reminds us that ecological research should be balanced with sociological inquiry in order to avoid deductive nomological explanations (Walters and McCay 2008).

Robert Netting did major studies on the relation between agriculture practice, household formation and land tenure. His comparative work on various small households and his intensive works on sustainability reveals practical issues related to time-labor allocation, energy input/output, stratification and property over land tenure, and adaptation resulting from market changes (Netting 1993). His major concerns with land tenure and distribution and transition of farming practice connect the issue of ecological awareness with the key debate in agrarian studies over the rationality of peasants (Chayanov 1986, Scott 1976, Popkin 1976). Netting compares the relationship between smallholders' decision and social organizations, bringing human agency into the ecological perspective by incorporating classical themes. Comparatively, in his seminal work *Agricultural Involution*, (1963) on the convergence of plantation patterns and colonial regulations, Clifford Geertz provides an institutional study on the stagnation of a farming area after a cultivation system was imposed upon a dual system between wet paddy rice and sugarcane farms. His study was later criticized for neglecting the heterogeneity of farming activities, the shifting of farming populations, as well as the latent political structure lacking potential for farmers to accumulate capital under industrialization (White 1983, Wang 2004). The critique of Geertz's historical perspective leads to the discussion of political ecology in the next section.

1.3.1 Political Ecology and Contested Traditional Knowledge

Political ecology, the complimentary approach to cultural ecology in environmental anthropology, focuses on the prime questions of political interaction and framing of nature, which resource and economically driven discussions of ecology usually neglect. Eric Wolf (1972), adapting a neo-Marxist approach to consider ecology, was the first to apply the idea of political ecology with a dissatisfactory view of the internal and syncretic level of ecological analysis (Biersack 2006: 8). In order to reflect on my discussion, I engage two particular aspects of the discussion on political ecology: the idea of nature and contesting traditional ecological knowledge.

In the application of tradition knowledge of ecology, who owns the concept of nature, and in what way it is managed to reflect the ecological system? The debate between Stephen Lansing and Stefan Helmreich regarding the function and representation of cybernetics and equilibrium in Balinese culture and its ecological system is a great example of the two extremes of political ecology. For Lansing, the automatic and structural arrangement of water temples in relation to irrigation in Bali is a format of embedded ecological knowledge in the design of artificial activities (Lansing 1991). This is an extension from classical neo ecology which views ecological practice as an unconsciously regulated equilibrium (Harris 1966, Rappaport 1968). The model of this self-regulated system functions without deliberate intervention by people, yet it is a highly rational result of necessary activities. Lansing argues even further that due to the administrative involvement of colonialism, the status of local priests was highlighted for local control rather than being attached to the system in the first place (Lansing 2000: 311). Helmreich, as an anthropologist of commutation and artificial life forms, responds with another approach of political ecology. He sees the equilibrium of human activities in communities as being

conceptually collapsed into “nature” where “nature is understood to be a system seeking homeostasis” (Helmreich 1999: 249). To rejoin Lansing’s explanation on the power relationship framed in the traditional Balinese irrigation system itself as a Foucauldian institute of power relation, Helmreich suggests that assuming that local ecological knowledge is separated from the historical hybridization of the power structure, is in itself a misread of the ecological network of local knowledge (Helmreich 2000: 320).

This can be taken into the discussion of indigenous knowledge offered by Michael Dove (2006), Roy Ellen et al. (2000), Arthur Escobar (1998), and Anna Tsing (2005). The idea and context of indigeneity is compared and contrasted with different theoretical foci. As counterpart to modernity, indigeneity is taken as autochthonous and traditional before the invention of “modern” culture (Appadurai 1996, Giddens 1984, Tsing 2003); as a conflated category of “local,” this concept is criticized for being applied without clear articulation of the background of its formation and reflection on its political economy (Clifford 2001, Kuper 2003, Li 2000). While the notion of indigeneity is often used as the substitute for local differences, the framing of such claim and the contextualization of indigenous activity with the international environmental movement is nevertheless a great topic within recent environmental anthropology (De la Cadena 2002, De la Cadena and Starn 2007, Hathaway 2010, Tsing 2003, Turner 2002).

1.3.2 Science, Technology Studies and the Environment

As a measurement of visibility, traditional ecological knowledge has entered the arena of global science and technology studies. For visibility, Bruno Latour’s (1979) classical work about describing complex laboratory interaction delineates public “staging,” which resembles rituals that anthropologists are familiar with. The difference is that performances in labs are

constantly far away from the final “staging,” where public access and comments to the performance are rare. George Marcus promotes multi-sited fieldwork (1995), which is a *spatial* strategy for capturing the contemporary ritual of knowledge production. However, the lab works and their consequences may also be *temporarily* varied, which requires examination of the time-lag effect between global and local (Rajan 2006). In both spatial and temporal senses, anthropology of Science and Technology Studies (STS) asks for chronological and geographical understanding of technological implementation.

The aspect combining TEK (Traditional Ecological Knowledge) and STS is about craftsmanship of knowledge and the embodiment of expertise. Scientific knowledge or applied materials have their social lives (Appadurai 1986, Latour 1987) and networking (i.e. “Actor Network Theory,” cf. Law and Hassard 1999, Latour 2005). Farmer’s plantation skill and scientists’ lab techniques have their own embodied authenticities. While scientists may consult the experiences of farmers to provide better anticipation of crop productivity, farmers usually do not have the power to replicate lab work. Such a difference marks the fundamental alienation of the Actor Networking Theory (ANT), in which scientific breakthrough rely on the transformation of the actant’s social context (either people or materials). Nevertheless, the relationship between “figure” and “ground” in the field of agri-biotech may redefine what is considered as “knowledge” and what is considered as “experience” (Strathern 1999). On the one hand, I pay attention to the historical development of local biochemical studies as well as the contemporary establishment of agricultural biotech exchange platform promoting local scientific results. On the other hand, the utilization of farmers’ observation and organic knowledge is a bottom up connection to the global trend of bio-outsourcing. In order to further explore embodied expertise, I follow the discussion on power and representation across different fields

of embodiment (Csordas 2002, Strathern 1996) and how indigenous knowledge connects to global science, technoscape, or corporate assemblage (Appadurai 1996, Sillitoe et al. 2004, Ong & Collier 2005).

The nature vs. culture dualism is translated into academic interests in environmental studies with anthropological methodology, and reflected in two corresponding viewpoints. To take up the natural perspective, human ecology and a processual model are affected by the change of scientific evidences throughout the application of human activities. Focusing on cultural impact, political ecology rather emphasizes the analysis of the infrastructure of political economy as an underlying effect. As an effort to reconcile the distinction, actor network theorists such as Bruno Latour (1993) and Michael Callon (1986) have tried to highlight the agency of things as well as the networking that is mutually connected among human beings and the things/skill that is at stake.

1.4 THEORETICAL SETTING II: AGRARIAN STUDIES, BIOTECHNOLOGY, AND ITS DISCONTENTS

For the second part of theoretical review, I enter the dialogue with agrarian studies, science and technology studies, and environmental research focusing on public participation. Specifically, I follow the analytic approach derived from Anna Tsing's "scale" in her multi-level fieldwork in *Friction* (2005) to interrogate the "contact zone" between local and global. From the classical concern with peasant economy to the emergence of alternative farming practice, agrarian studies have paid long-term attention to farmers' struggles over living conditions, as well as social justice, moral economy, and exchanges through communal connection (Shanin

1990, Scott 2001). Furthermore, the exploitative land tenure policies and fluctuating profits under minimal wages and unpredictable risks usually count as precedents of peasants' rebellious movements (Chayanov 1986). Based on the "subsistence ethic" (Scott, 1976), peasants' daily practice and reciprocal exchanges are woven into a social safe net. Though individual decisions may be considered as "rational actions" (Popkin 1976), peasants are structurally subaltern in regard to their subjectivity and access to capital or new technology.

While resistance such as sabotage or leg dragging when resources are unavailable is classically portrayed (Scott 1985), technological modification and innovation are usually means of social control for higher production results (Geertz 1963, Bray 1994). Conflict between industrial concern and agricultural subsistence is also a form of negotiation for calculating risks from different sectors (Beck 1995). In the contemporary setting, the surge of local conflict can transform into social movement demanding information disclosure and negotiation to go against free-market juggernaut (Edelman 1999, 2005). Peasant studies thus depart from debating the agency and mobility in the lower social strata (Little 1989, Shanin 1982, Scott 1976, Wolf 1969), to encountering the clash between globalization and local survival (Edelman 2003, Tsing 2003, 2005). Built on classical approaches about resistance and political mobilization, my research extends the discussion of the impact on farmers' strategization under government policies and new technologies. In particular, studies about the transition of productive means (such as conflict between sugarcane and rice in historical context) provide a good analogy of agrarian studies in the contemporary scenario (Bain 1993, Ka 1997, Mintz 1986). My research is based on the discussion of the global force of mass production to explore the continuity and contingency of farmers' current lives.

Nevertheless, agricultural practice encounters “hybrid forms of life and technology” (Fischer 2003: 5). By hybrid forms it refers to the emerging forms of biological application or means of consumption that lead us to question the conventional framework of knowledge (Fischer 2003, Franklin 2000). Agricultural biotechnology brings flexibility with uncertainty to the future (for capital accumulation) and the past (for authenticity) of farming, while the issue of acceptance of genetically modified crops is under critical debate (Bird 2006, Lyons and Lawrence 1999, Stone 2002). As Kaushik Rajan put it, “biocapital” reflects changes in two broader domains: life science becomes information science, and biotechnology becomes a form of contemporary capitalism (Rajan 2006). Nevertheless, the concept of “biocapital,” derived from Marx (1990[1894]) and Foucault (1979, 1984), varies in the meaning as new modes of production and reproduction of organisms changes. Tracing different “species of biocapital,” Helmreich (2008) delineates the genealogies of “bio” and “capital” while the two aspects meet. My research therefore attempts to understand a new application of existing organism, and how manipulated biological resources connect to neoliberal capitalism when agricultural biotechnology is not only for local research but also for sale.

Classical ecological, environmental and agrarian studies have laid out a great foundation for anthropologists and other social scientists, who are engaging with global and local agro-environmental issues. Building upon such a foundation, the “actor network theory” (ANT) (Callon 1986, Latour 1993, Law 1999) and “multispecies ethnography” (for other natural resources conservation approaches, see Kirksey & Helmreich 2010, Tsing 2010) are two innovative theoretical approaches dealing with contemporary agricultural and environmental studies. Their theoretical stands can be compared and contrasted according to several differences, including: relationships produced and recognized in actions, definition and

understanding of agency, and the dynamics of assumed communities within the network. Among them, the most significant distinction is that, while ANT provides the context of epistemological symmetry, it can be argued and criticized “using science as a stand-in for nature” (Yearley 1993). Thinking from the perspective of a remedy for such asymmetry, multispecies ethnography and theory recognizes and incorporate the distinctive types, structures, and power of natural agency in to the methodological challenges of ecological analysis (Little 1999, Kirksey & Helmreich 2010), and thus confronts epistemological symmetry through ontological asymmetry. The overwhelming focus on “sociality” also results in the mutual incorporation of human actions and natural forms, which Paul Rabinow called “biosociality” in which “nature will be known and remade through technique and will finally become artificial, just as culture becomes natural” (Little 1999: 258).

1.5 THEORETICAL SETTING III: WHAT IS AFFECT GOOD FOR? LABOR, IDENTITY, AND LANDSCAPE

The third theoretical background of my research is the affective turn in environmental studies with concern to activists’ practices, especially movements about agricultural change, organic practice, and politics of environmentality. Counter to general assumption, environmental beliefs are usually led to actions after the participation in the field (Agrawal 2005). As beliefs and thoughts are formulated in response to experiences and outcomes over things that single agent have little control over (slogan such as “we have only one earth” also following Anderson’s “imagined community”, 1991), subject making for the environmental issue is connected to the production of governance (Foucault 1979, Ferguson 1994). The discourses on

governmentality, such as the spatialization of territory, democracy of the local, and the rational control of “resources” (Gupta & Ferguson 2000, Pels 1997, Tsing 1993), also extend the realm of environmental researches. By denoting environmentality as a framework in which technologies of self and power are involved in the creation of subjects, the idea of a “sacred” or “spiritual” environment (cf. Weller 2005, Crumley et al. 2001) can be created by bridging the gaps between individuals and institutions, and the environmental movement as the agent.

I take the “affective turn” (Clough 2007, Massumi 2002) from humanities back to the analysis in anthropology following the discussion of affective labor by Michael Hardt and Antonio Negri (2000), Brian Massumi (1995), and Mazzarella (2009), among others. The affective labor in the agricultural section and the construction of environmental knowledge are not the labor in affective form as commonly discussed within such an issue, but rather the labor is transformed into the affective investment and reproduction as “the constitution of communities and collective subjectivities” following Michael Hardt (1999: 89). As Hardt argues on the affective turn of social constitution, affects can be considered a major quality connecting corporeal experiences and cognitive evaluation. “Because affects refer equally to the body and the mind, and they involve both reason and passions. Affects require us, as the term suggests, to enter the realm of causality, but they offer a complex view of causality because the affects belong simultaneously to both sides of the causal relationship” (Hardt 1999: 90). While organic farming becomes a branding and consumption of ideas more than the recognition of the politics of nature (Vos 2000), it promotes standardization of what can be provided and immaterial labor in the “passage of information between the factory and the market” by the “Toyotist” type of production rather than Fordist type (Hardt 1999:93). Nonetheless, affective labor is also recognized in gendered services and works that have been taken over by migrant laborers as a

result of globalized capitalism, which trivializes the non-factory production in the labor of affective services. Affective labor is therefore not only a product on the immaterial aspect of capitalism, but also a reflection of the subjectivity of migrant/working condition.

As discussed in the previous paragraph, the engagement of new economic transformation accompanied with the “affective quality” is usually effective. In her study of volunteers and part time workers in post-Fordist Italy, Andrea Muehlebach (2011) discusses how the feeling of belongingness and the identities of workers are a preconditioned outcome of privatization. In many cases of the indigenous environmental revitalization, as well as temporarily engaged occupations after disasters, intimacy is “state-mediated within the context of new forms of exclusion and dispossession that have come to haunt the body politics” (ibid 61). Connecting the display of knowledge as property into the identity of action (Strathern 1999), as well as the transition of traditional properties into environmental governance (Aragawal 2005, West 2006), the new forms of affectively engaged labor activities then become the subaltern identity in a capitalist empire as Hardt and Negri discussed (Hardt and Negri 2000: 106).

The tricky essences of affective labor and induced identity are that, they were produced via the experiences in capitalist management, yet created an alternative possibility for participants to reconstitute their living condition, from bare life to a “citizen life” (Muehlebach 2011: 64). As Brian Massumi discusses in his essay, affect is alienated from the body since the enlightenment era when the body was associated with the identification of senses (Massumi 2002: 29). On the other hand, Mazzarella (2009) uses affect in a way to counter the notion of economically and politically engaged designs of the transition which dominate the structure of feelings of the members in a culture in expression and reference. Affective engagement of labor

can be discussed via the understanding of religious projection of social relationships. Discuss the alienation of worship and projection of social relations is a basis of understanding affect.

1.5.1 Affect and Identity

Based on the interaction between minority aboriginal and majority Han populations, the research of the relation between identity and affects can be considered from both constitutive and competitive approaches. By constitutive, I mean the disciplinary and learning aspects of emotion expression in the public domain, such as schooling, policing and forced civil obligation from the modern state; by competitive, I am referring to disputes or conflicts between daily activities. “Disentangling” is the idea which Watson-Gegeo and White (1990) discuss in their edited volume on conflict solving and affect expression in Pacific societies. Following their discussions, disentangling refers to “cultural activities in which people attempt to ‘straighten out’ their ‘tangled relations’ (ibid: 5),” including conflicts, disputes, gossips, interpretation of intentions, or ambiguity of expectations. We can also consider that emotions have the internal aspects of cultural capacity while the external aspects are the performed and relational dimensions of affects, which are represented in the processes of entangling or disentangling. In the prospective fieldwork, my concern will be with the relations between the indigenous population and the Han Chinese with a focus on how the indigenous people express the feeling toward distress in the interaction.

In their comprehensive review, Lutz and White (1986) summarize the approaches of anthropological studies on emotion up to the late 1980s. According to Lutz and White’s discussion, the aspect of identity is to understand emotion through embodied naturalism for “commonsense,” a process involving empathy and social positioning. In this approach, emotion

is mostly considered to be the “secret recipe” of doing ethnographic works and through empathetic understanding, the ethnographer is able to grasp tacit knowledge or feeling in a culture through intersubjectivity, and thus acquire “introspective ethnography” (Lutz and White 1986:415). This approach later also connects to the embodiment paradigm of anthropological research (cf. Csordas 1990). The political economic bases of specific expression from certain affects are necessarily important for further examination.

Nevertheless, affect is an activity that not only reflects the framing of emotions, but is also bodily engaged. Embodiment is introduced to reconsider the process of emotion performing/perceiving. Emotion is an embodied behavior, with the intention to change or negotiate what individuals are impelled to do. Embodied emotions emphasize that feelings have bodily origin and corporeal quality. This is especially true and powerfully recognized by anthropologists who are studying the emotional reactions of diasporic populations or victims under some traumatic experiences (for example, the works in the anthologies of *Embodiment and Experiences* (1994), and *Tense Past* (1996)). Thomas Csordas advocates embodiment as a paradigm to engage “body praxis” from Bourdieu with “corporeal intentionality” from Merleau-Ponty. This emphasis brings attention to the body prior to cognitive management. Csordas introduces this idea of studying body, defining emotion as a process “in which pre-objective (instead of pre-culture) multi-sensory experiences are experienced and objectified” (Csordas 1990: 9). Through affects as “interpretation,” cultural meanings are transformed, and through emotions recognized as “embodiment,” collective symbols acquire the power, tension, relevance, and sense emerging from individuated histories.

In addition to body, landscape is also the site of affective engagement. Through ethnography on different locations; the attachment to geographic locations is a major feature of

how people project their memories, fondness, histories, and identity onto certain form of spaces (Casey 2003, Feld and Basso 1997, Smith et al. 2009, Urry 2008). Yet, it is also worth noting that environmental degradation and disasters result in huge sentiment toward once sacred landscape, and resentment toward the capitalist activities that lead to such a problem (Marlen 2007, Chapin et al. 2005, Tsing 2005). From previous discussion, I intend to show that different perspectives of understanding emotion lead to specific constitutions of frameworks in research. Emotional expression is also considered quintessential for knowing the idea of personhood and self of the culture. This dissertation also delves into the expressive culture and genre through staged performances and the accompanied emotion accordingly among indigeneous environmental issues, particularly on property. This is a reconsideration on anthropological researches from Han Chinese-centered administrative politics. It also shed light on the doubtful presumptions of the native/natural emotions and isolated identity recognition based on the political status of Taiwanese aboriginals given their serial colonial experiences and contemporary position under state-funded agricultural projects.

1.6 KNOWLEDGE IN ACTION: ENVIRONMENTAL IDENTITY AS NEW AGENCY

Environmental identity is an extension of ecological knowledge and social networking. Furthermore, environmental citizenship reveals agency that includes ecological knowledge and environmental engagement. This type of citizenship is not only about identifying to the surrounding environment and ecological change, but also the entanglement of political economy and engagement with interest groups. Though NGO may be constructed for “doing good”

(Fisher 1997), their actions are also charged as the new colonialism of ideas and Western bureaucracy, which do not necessarily address the needs of local communities (Pels 1997, West 2006). While the exchange of ideas is easily mistranslated as the exchange of values, the knowledge that a place fosters or a group of people uses is commodified through outsider's mediation (Princen & Finger 1994). The connection between "global vision" and "local action" falls in the realm of environmentality, where sensory appreciation and spiritual representation are all at work in recognizing the authentic knowledge and spirituality of nature (Aragwal 2005, Feld & Basso 1997, Nazarea 2006, Weller 2005). The approach for sustainability and international indigenism also requires the transformation of conventional wisdom into "convenient" actions (Dove 2006, Litzinger 2006, Turner 1993, West 2006). This study in the end pays attention to agricultural activism by focusing on the "efficacy" and the routing of global issues, while examining the views of farmers, scientists, and activists on the entanglement of agri-biotechnology utilization and environmental protection.

2.0 CHAPTER TWO: KNOWING THE FIELD—THE HISTORICAL TRANSITION OF AGRICULTURAL POLICIES AND RESEARCH INSTITUTES

History is the trajectory of time. As the flow of time hits the banks of social lives, the lives are shaped by the process of transitional practice, and the forces of colonial and technological institutions have inscribed on the lived experiences of local populations. The agricultural transformation in Taiwan is considered a “miracle” constituted by various conditions brought about by colonial and authoritative policies. With the Tropic of Cancer crossing through the middle of the island, Taiwan has the climatic benefits to experiment with the growing of various plants and crops for economic purposes. During the Japanese colonial period, Taiwan became Japan’s agricultural base and as the counterpart for Japanese industrial development on its main islands. This agricultural development included the installation of a rice-sugar leverage policy and farmers’ associations, as well as the establishment of agricultural research institutes. The slogan “Industrial Japan, agricultural Taiwan” was acknowledged by scholars (Yanaihara 1985[1929]; Yager 1988; Wu 1993; Ka 1995). As a result, the scientific development of agriculture in Taiwan and the organizations established were the driving forces of the later advancement of Taiwan's modern agriculture. Throughout the colonial time, training for scientific farming and education for agricultural knowledge not only served the purpose of the colonial government, but also connected local organizations with farmers’ associations and agricultural research extensions. Right at the end of WWII, the American government in

cooperation with the Nationalist government of the Republic of China, started the postwar aid program to "Free China"⁶ led by the "Sino-American Joint Commission of Rural Reconstruction" (Yager 1988). The committee was critical to the development and design of postwar agricultural policy in Taiwan up to the present. This chapter is a historical exploration of how systematic science as well as organizations began to regulate agricultural production, influencing both agricultural projects and farmers' reactions. Since there has been a nearly century-long relationship between modern scientific research and agricultural practice, my inquiry in this chapter focuses on three questions: what are the differences between the Japanese colonial scientific establishment and American-commissioned scientific aids? In which way are the differences reflected in the understandings of agricultural scientists, local practitioners of research extensions, and farmers? To what extent are contemporary agricultural initiatives influenced by the past historical legacy that is discussed here? And last, what are the problems reflected in the study of contemporary agricultural initiatives based on the transition and shifting of goals? In the first half of the chapter, I review the purposes and achievements of different agricultural technologies from the Japanese colonial period to the present. In the second half, I discuss the influence of farmers' organizations and their importance for arranging agricultural practices.

⁶ "Free China" refers to the Republic of China, the de facto government of Taiwan, versus the People's Republic of China as the government of Mainland China. It was coined by the anti-communist allies during the cold war era.

2.1 AGRICULTURAL TRACES ON THE FRONTIER OF EMPIRES

Taiwan's geographic location marked its marginal connection with different empires throughout history. The archaeological site Shi San Han (十三行遺址), located at the mouth of the Tamshui River (dated to ca. 2500 B.C.), shows that the residents had already learned to grind off the husk of native rice (Tsai 2009:15). In 1544, a Portuguese merchant ship sailed by the eastern coast of Taiwan heading toward Japan and encountered the island, which was named by the sailors "Ilha Formosa." At that time, Taiwan was already occupied by the mountain and plains aboriginals who employed mostly the slash-and-burn cultivation method (Wu 1993; Hu 2000). Later historical records and observations concentrated on the area of the Tainan plain, because the VOC (Vereenigde Oost-Indische Compagnie) Dutch set up a colony there (1624-1660) as a branch of Batavia in Indonesia. Observations by the colonial officials and missionaries reported that the native plains aboriginals (平埔番) engaged in a rotational pattern of swidden agriculture in what are currently the Tainan and Kaohsiung areas. The plains aboriginals adapted to the environment well, without exhausting the local plains in order to keep deer hunting sustainable. According to an estimate, the population density of plains aboriginals was 8-12 people per square kilometer, much lower than the calculated sustainable populations of 20-30 people per square kilometer. However, according to an observation by the Dutch administrators, the "unproductive" agricultural practices that they witnessed seemed to them "backward" and lacking of any advanced manner of cultivation (Kang 2001).

After “*Koxinga*” Cheng Ch’eng-Kung⁷ expelled the Dutch and started a military settlement in Taiwan as an anti-Qing base, the immigrants from coastal China, mostly from Fukien and Guangdong provinces, flooded into Taiwan for new cultivation opportunities. By the time that Cheng’s camp was defeated by Qing troops in 1683, the immigrants farming in Taiwan had already established themselves agriculturally and continued to grow in number after the Qing court acquired Taiwan. The major agricultural transition during the period of Qing rule in Taiwan was the establishment of a land tenure system among the settlers and the plains aboriginals. This was foundational in the process of Han immigrants’ acquiring of land from the plains aboriginals. It was also at this time when the land tenure system was negotiated between the two ethnic groups. According to the summary of Wu Tien-chuan (1993: 191-193), the Han had several means of acquiring land from plains aboriginals during the exploring-to-settlement period: 1) by exchange with rare goods such as liquor, cloth, and pigs, 2) by marrying plains aboriginal women and inheriting the land by matrilineal custom, 3) by acculturating into the community to get the land as adopted kin, 4) by cheating, 5) by secretly cultivating the land and claiming ownership of it to the administrators as *fait accompli*, 6) by engaging in unequal trade with groceries or loans, 7) by defiling the land with dead animals and driving the original residents away, 8) by acting as tenants for the aboriginal landlord and gradually acquiring the actual function of the land. The plains aboriginals, on the other hand, only reacted to the trend of immigration by moving to other places, through resistance and rioting, or most commonly, by becoming acculturated and adopting the Han ethnic identity in order to keep their means of making a living (Kang 2001; Ka 2003).

⁷ Cheng was the son of a mighty pirate in coastal China during the late Ming Dynasty. After the Ming Court was chased out by the Qing troop, Cheng summoned a group of followers to expel the Dutch then occupying Formosa, and claimed the island a military base for rebelling against Qing ruling. Cheng was then conferred the last name of Ming Court emperors, Chu. Thereafter the lay people referred to him as “*koxinga*”, “the Lord of Royal Name.”

The major change in the agricultural system in Taiwan before the Japanese colonial period was the formation of a three-level land tenure system. The *k'en-hu* (墾戶 “patent holder/owner”), later known as *ta-tsu-hu* (大租戶 “patent holder/tax payer”), were the descendents of the original explorers who were the holders of the reclamation patent and owned the surface rights to the land. The *t'ien-hu* (佃戶 “perpetual tenant”) developed into two types: *hsiao-tsp-hu* (小租戶 “possessor/owner”) who held subsoil rights and *hsien-k'en-tien-hu* (現墾佃戶 “subtenant”) who were the actual "working-tenants" of the farm. This transition of the tenure payment system is due partially to the previously mentioned land ownership conflict between Han immigrants and the plains aboriginal landholders, and partially to the means of collective cultivation by the new settlers based on their relative relations and the later transfer of the actual tenancy to the latecomers (too long) (Wu 1993: 252-254). The transition not only marked the rise of the perpetual tenants' land rights as the result of the division of labor between the taxpayer and the genuine owner of land, but also indicated stronger ownership rights by perpetual tenants in Taiwan compared to their counterparts on the mainland (Ka 1995:20-27). The moral issue between the two classes and support from the land entitlement are different from the case in Mainland China (cf. Oxfeld 2010: 178-180). Land reform was carried out in 1950 by Chinese communists, which mobilized the conflict between landlords and poor peasants by naming the landlords as “bad class.” In Taiwan during the Japanese colonial period, perpetual tenants held the actual rights over the land, which provided a model for local entrepreneurship in the later farmers' organizations. The reasons for having a multi-layered tenant system also reflect the intensive exploitation of the environment within a limited landmass, which set a precedent in the general thinking about resource evaluation and land application while the technology led to different stages. The relationship between perpetual tenant and subtenant is

recapitulated in contemporary agricultural policies as well as in land-based property thinking. I will return to this point later on.

2.2 DEVELOPMENT AND DEPENDENCY DURING THE JAPANESE COLONIAL PERIOD, 1895-1945

In the beginning of the Japanese colonial period, most of the land tenure registration records from the Qing Dynasty were lost due to the chaos of wartime. In 1898, three years after Taiwan was acquired by Japan according to the Treaty of Shimonoseki, the Japanese colonial government started to do the first land tenure survey for the purpose of land acquisition and taxation (Ka 2003:45). These records had two purposes: First, to document the status of the small shareholder's family farm as the foundation of the sugarcane industrial capital that was later depended upon. Second, the modern police system was established as the ruling authority during land tenure registration, which paved the way for later land taxation procedures after the registration was done (Chen 1984). The colonial government guaranteed the landownership of indigenous owners, in the form of both *Ta-tsu* (大租 land ownership) and *Hsiao-tsu* (小租 land usufruct) tenures, in exchange for their obligation to pay taxes. Even though the colonial administration was successful in the implementation of this land policy, the central government of Japan still had to issue up to 35 million yen bond in order to provide the funds needed for the civil construction and administration fees. Japanese public opinion favored the sale of Taiwan to any available buyer, including China (Ka 1995: 50). In order to deal with this issue, the third governor-general Kodama Gentaro and his civil affairs bureau chief, Dr. Goto Shimpei, decided to explore another important source of revenue as a means of repaying public debts and reducing

Japan's fiscal burden: the government takeover of the monopoly benefits held by foreign traders of opium and camphor, as well as the investment in new sugarcane processing factories (ibid, 53). A medical doctor by training, Goto believed that Taiwan must be ruled by "biological principles," i.e. that he must first understand the habits of the Taiwanese population, as well as the reasons for their existence, before creating corresponding policies. For this purpose, he created and headed the Provisional Council for the Investigation of Traditional Habits of Taiwan (臨時台灣旧慣調査会). The Council for the Investigation of Traditional Habits was a survey institute, which included the survey of private customs and contemporary civil contract documents of the newly colonized Taiwan.

In order to promote research of natural and tropical agricultural resources in Taiwan to provide the background for what Goto Shimpei advocated as "biological principles," the colonial government established several agricultural research institutes in the first decade of its rule. The newly established institutes included Taiwan Agricultural Research Institute (1895), Agricultural Research Extensions in Taipei, Taichun, and Tainan (1899), Central Institute for Agricultural Research (1903), Stud Breeding Institute of the Governor-General's Office (1896, later became Taiwan Livestock Research Institute in Tainan), and also The Experimental Research Institute of Sugar (1906). The newly arrived staff of these "modern" agricultural institutes were connected by having the same colonial educational background at the Agricultural College of Sapporo (Wu 2008). There were about two hundred Japanese agricultural/engineering professionals and technicians working in these institutes from The Agricultural College of Sapporo (later University of Hokkaido, est. 1876) during the fifty years during colonial period in Taiwan. With the connection to a newly established college at the northern border of Japan, the production and

technological advancement for wartime resource exploration was a major direction for their career.

Japan started its colonial period in East Asia after the first Sino-Japanese War and acquired the South Pacific Islands after “claiming” participation in WWI. Beginning in 1914, Japan occupied the German territories in the Mariana Islands, Palau, the Caroline Islands, and the Marshall Islands. In 1922, the South Sea Agency was established on the island of Koror in the Palau Islands. As Tomiyama Ichiro points out, the South Sea Islands were significant not only in the military sense. He claimed that “life in the South Sea Islands is the training ground for the *Southern Development of the Japanese race*” (Tomiyama 1995, emphasis added). These “island peoples,” observed and classified by the Japanese as the “Other,” were, at the same time, the therapeutically treated “islanders.” The unity of the epistemological and practical narratives in this kind of academic discourse shows that the self-identity of those classified as “Japanese” was affirmed through therapeutic practices in medicine, hygiene, and education. As a colonial reaction to the tropical differences and the making of a “modern” race, Japanese experiments based in the southern islands were a series of trials for the interaction between “nature” and “race.” Japanese colonial advancement through their industrial and resource exploitation strategy was later coined the notorious “Greater East Asia Co-prosperity Sphere.” Nevertheless, the formation of this concept and the execution through scientific institutions such as the tropical/agricultural research agencies is a reflection of the formative Japanese colonial agenda based on the dynamics between the natural sciences and racial/ethnic categorization. Since the 1920s, Taiwan became the base for the training and exportation of scientific technicians for Japanese occupations. According to historian Chang Jin-Yi, the reasons that Taiwan became the base of research and technological exportation were several: 1) Taiwan was the largest area in

the southern part of the Japanese Empire (Manchuria was the northern base) capable of experimenting with different types of tropical plants; 2) During wartime, the occupied territory in Mainland China was devastated due to the bare-land strategy of the Nationalist Army, and the area occupied in the Indo-China peninsula was mostly growing cash crops instead of staples; 3) Two major crops under intensive experimentation, rice and linen, are the exact materials that were needed militarily (for food and clothing) (Chang 2003). Based on these reasons, as well as the promotion by the Governor-general's office as a way to lobby for investment by local Japanese corporations, Taiwan was transformed from a colonial production territory to a technological "hub" during the Pacific War.

Because of a sizeable increase in demand, the office of Taiwan's governor general established agricultural experimental stations and farmers' associations to train more professionals for more efficient monitoring and direction. Two waves of agricultural specialists and technicians were trained in Taiwan and later sent to Southeast Asia and Hainan Island to meet local needs. The first wave was recruited in 1940 at Taichung Prefecture, Taiwan. Most of the recruits were relocated Japanese from the "interior territory." They were later enrolled into the resource exploring enterprises invested in by the government and private capital, such as the Taiwan Development Corporation, Meiji Sugar, Nippon Gasoline, etc. The second wave of recruitment was largely aimed to fulfill positions as local advisors and helpers in the crop production area of the Co-Prosperity Sphere in Indochina. This second wave of personnel was recruited in 1942 at ten different locations. At the end of the training, 203 apprentices were trained at the Tropical Agricultural Training Extension, affiliated with the Taiwan Agricultural Research Institute. Seventy of them were sent to the Japanese Corporate in New Zealand, and then back to Indochina for wartime production; 63 of them were sent back to Japan to Mitsui

Corporation; and 20 of them remained at the Taiwan Development Corporation (Ibid, 52-55). As a result, Taiwan played an intermediary role in the making of another imagined boundary of the South Island circle.

The research into agricultural technology was directed toward military and pragmatic use as a structural factor in Japanese Jingoism. As an effect of historical evaluation, the promotion of tropical sciences via the “Great East Asian Co-Prosperity Sphere” (大東亞共榮圈) and exportation of technicians reflected the effects of colonial social engineering in two aspects. For one, it marked a major success and anchoring point for the later usage of similar means that transform agricultural materials and technologies for industrial usage. For another, it framed embodied historical memories of the participants and their followers, forced or voluntary, to evaluate the installation of agricultural policies with the efficacy of the colonial social engineering. Both effects are further exemplified with the cases of sugarcane factory innovation and the bodily experiences in Japanese vocational schools during the colonial period.

2.2.1 The Industrious Body as Colonial Subject

Patricia Tsurumi concludes from her study that the colonial education during the Japanese period provided Taiwan with a “modernized” agenda by systematically training doctors and teachers for vocational purposes, as well as distilling the habits of physical labor and observation, which were ignored by the traditional Chinese educational system (Tsurumi 1977). As the “Order of Taiwan General Education” was enacted in 1919, the colonial attempt at assimilation then officially signified Taiwanese integration into colonial life on the basis of equality with the Japanese (Tsurumi 1979). Beginning in 1920, with the establishment of vocational schools in Taiwan, these schools became the local centers of training technicians and

instructors in major fields such as agriculture, mechanics, industry, and business. Traditionally, Chinese intellectuals considered vocational skills as marginal and insignificant, while the educational system via private tutoring featured the study of philosophical canons rather than practical technology. The colonial education policy provided a re-shuffling opportunity for the poor, and the politically dominated a chance to revise their social status. The educational principle for the *Kominka* movement was especially designed to create a “docile body” so that there was a link from colonial education to vocational knowledge, and finally to bodily productivity (Ching 2001, Stoler 1995).

In order to introduce the modern school educational system, the first step was to implement temporal regulation. Before the Japanese colonial period, time was marked by farming and folk activities; a day was divided into twelve sections according to the Chinese almanac. Only when the Dutch missionaries introduced church service did the scale of “quarter” become implemented. Following the format of newly created space in schools, the arrangements of student activities were regulated by the schedule of course taking and exams (see Figure 1 for the five-day schedule of a week). Furthermore, over the five years of study, only the first three years were intensive coursework (in figure 1, the vertical column of 12-123 are course schedules in the morning, 1234 are those in the afternoon), and the last two years were scheduled to do an internship in the afternoon (Su 2004).

第一學期									
音	音	音	音	音	音	音	音	音	音
南	公	肥	修	造	1	國	植	英	修
國	病	物	幾	作	2	地	地	農	代
						國	英	丁	林
還	經	果	三	蔬	3	地	動	花	物
聖	藏	修	公	農	1			修	代
			作	刺	2			工	文
			丁	國	3	生	幾	蛋	代
						英	國	鏡	物
						禽	虫	修	作
								造	化

Figure 3. Schedule of Agricultural Vocation School in 1942

(Adapted from Su 2004: 71).

The Japanese colonial educational system in Taiwan was divided into four types: general education, vocational education, professional education, and normal school for teachers. The vocational education included two kinds of schools: The first kind was a two-year simplified vocational school, focusing on students from elementary school and technical training. The second was a three-year public vocational school, transformed from public vocational extensions, and provided general education and technical training⁸. In a modification of colonial education in 1930, the colonial government established another type of two-year agricultural school, the

⁸ The courses scheduled for agriculture and forestry vocational schools were divided into several specialties: Agronomy, Silkworm-raising, Horticulture, Husbandry, and Forestry. The general courses included: Philosophy, Civil spirit, Judo, Kendo, Japanese, Mathematics, Physics, Chemistry, Natural history, Political-economy, Gymnastics, Crops, Horticulture, Soil science, Fertilizer, Pest Control, Animal husbandry, Livestock physiology, Agricultural production, Silk-making, Agricultural economics, Measurement, Afforestation, Forest protection, Forest utilization and management, Agri-forestry engineering, Veterinary, Aquaculture, and Internship (Su 2004: 33).

purpose of which was to encourage smallholding farmers to attain further education regarding their own crops as well as the light processing of industrial products (Tsurumi 1977: 85). The course of study in these vocational schools covered not only pragmatic and technical knowledge, but also basic reading and exercises that instilled patriotism, especially civic education, judo, and kendo. The treatment of the Han in terms of technological education can be held in direct contrast to that of the aboriginal people (Ching 2001): The training of the Han as colonial subjects was their functional integration as part of the machine of the empire. In contrast, the aboriginal people were taken as imperial subjects, the “other”, that was seen as the trophy of the empire.

There are two reasons that vocational learning was beneficial during the Japanese colonial period. Firstly, agricultural vocational schools were an important source for Taiwanese students to engage with “modern” practical knowledge. Even though in the last five years of wartime the focus had shifted to fulfill the logistics of mobilization, the schools were significant to Taiwanese youth in that generation since it was largely Taiwanese that attended these schools, while Japanese residents occupied regular high schools and universities. Secondly, vocational education combined “moral” edification and “practical” education, which had a deep influence on the students who later became government officials or research extension employees.

Among all the vocational schools (there were also industrial and commercial schools), training in agricultural knowledge was deeply connected to contemporary living conditions in Taiwan. While Taiwan was made into an agricultural production and research base for the Japanese government, the transition from raw material production to second tier food processing had begun. It is also for this reason that there were more students enrolled in agricultural vocational schools than the other two types of schools. The courses and training methods were

novel and inspiring for the students. As one of the graduates from an agricultural vocational school recounted:

The course in horticulture divided the whole range of knowledge into fruit trees, vegetables, and flowers; and the plants were divided into herbaceous and ligneous. I never thought that these common types of plants could be so strictly categorized before. The observation of the weather was also critical, and our instructors would use metaphors stating that we students should explore nature like an animal or a group of bees would to “re-learn what is in nature.”⁹

As these graduates from agricultural vocational schools later became the assistant researchers of agricultural research extensions, officials in local farmers’ associations, or young employees in state-owned corporations such as Tai-sugar, the training in their early days had formulated their schema of the world, which provided a basis for the later grafting of the nationalist agenda. These agricultural trainees later became the main workforce for nation-sponsored agro-businesses. During the Japanese period, the agricultural production growth in Taiwan can be divided into four stages, and the statistics of production demarcated by three major events: In 1913, the result of the first island-wide agricultural production survey since the first five year plantation project of the colonial government was conducted; in 1921, the successful interbreeding of “Ponlai” Japonica rice (which raised the production rate of rice up to thirty percent more compared to the native “Zailai” Indica rice); and the starting of the Pacific War in 1937 when the agricultural production was redirected to military use rather than civilian consumption and Japanese inland importation. The first three stages marked the increase in agricultural production, both in unit yield and overall production (Yager 1988:48). Production in the third stage plummeted due to the beginning of full-scale war, accompanied by reassignment

⁹ Su 2004: 53

of agricultural production for military purposes and constant air raids over Taiwan during the later half of the war.

2.2.2 Shining Sabers and Sweating Farmers: Imperial Researches on Rice and Sugar

Rice and sugar were two major products in colonial Taiwan, and therefore attracted the investment of the colonial government in major technological innovations. Rice was not the staple food of plains aboriginals in Taiwan until the late Qing period, when Han immigrants brought rice seeds from coastal China and started to plant this crop in the lowlands of Taiwan's western plain. The rice farming method was transformed in Meiji Japan, which combined "Fukuoka Farming" (developed in the Fukuoka area by skillful traditional farmers) and "Rational Farming" trends into "Meiji Farming" (明治農法 Tsai 2009: 32). "Meiji Farming" was characterized by several major rice cultivation skills: the use of animals to plow, fertilizers, the straight-stemmed seedlings, the planting of the rice seedlings after weeding, and seed selection in saline water. This method was justified and brought by the agricultural specialists and was ready to "transplant" in Taiwan. The most controversial aspect of the "scientific" methods was that of seed selection in saline water. According to the report, there were major doubts about this method by local farmers, who had used wind or coldwater selection for many years. Local farmers considered saline water harmful to the seeds. Although colonial officials offered the salt at low cost, farmers were wary and resistant to the new method, and even compared saline water selection to pests for the grains (ibid, 94). This method was inaugurated by forcing the farmers to demonstrate their utilization of the new techniques. This was called "agricultural administration under sabers" (軍刀農政) due to the fact that farmer practice was monitored with

the police holding sabers by their side as a reinforcing agent (ibid: 66). Japanese police would gather farmers on the farm, announced the task of the experiment of the day, and then stand on the ridge by the farm to watch over the practice of the farmers. The sabers were shining while the farmers were sweating.

Colonial research institutes focused their researches more on the crossbreeding and search for better rice seeds than did the farmers involved in local strategies of rice cultivation and selection. According to the Taiwan Agricultural Research Institute's *Centennial Review* (TARI, 1995), rice seed selection and crossbreeding first focused on bettering local product statistics and later focused on improvement of the rice as a commodity. Japanese agronomists observed that Taiwan's geography and soil was good for cultivation of the seedlings of the new rice type. However, the first issue was to find a suitable base for the transplant of Japanese *Japonica* rice. There are four major problems with transplanting *Japonica* rice into a tropical area: short planting cycle (leading to less nutritional absorption), low tiller number¹⁰ (which has less grains), short stem (making it easily destroyed by floods), and varying lengths of the ear period (making it difficult to harvest). In the first two decades of study in colonial Taiwan, agronomists found that early and short seedling periods, interbreeding between cold-resistant and warm-adapted types, and the selection of seeds after the harvest largely improved the adaptation of the *Japonica* rice. Finally, in 1922, crossbreeding between the Nakamura strain and Taichung 6 (the second generation of Kamiryo) rice was successfully done by Dr. Iso Eikichi (磯永吉) in the agricultural extension at Yang-Ming Mountain, Taipei, and was named "Ponlai" rice (蓬萊米) by then Governor-general Tokio Izawa. Soon after, Ponlai rice began to out-compete the

¹⁰ The numbers of branches of straw on a seedling. It is the critical index for agronomists and farmers to observe and compare the growth of rice seedlings and the impact of nitrogen-based fertilizer.

previously popular Zilai rice (在來米 which is an *Indica* type) because of its fragrance and texture, and it became the major rice type grown in Taiwan (Tsai 2008: 510-12).

In contrast to the development of rice technology and breeding efforts, the colonial research and plantation agenda for sugarcane was oriented more towards the regulation of the exchange between the sugar mills and the cane farmers. Sugar was a major export product before Japan acquired Taiwan. Since there was no major sugarcane industry and research institute in Japan dedicated to the study of sugarcane before the colonization of Taiwan, the research manifested itself mostly in learning through practice, as well as referring to the information from cultivation in other tropical areas such as Java and Malaysia. As a cash crop rather than staple crop, sugarcane cultivation was not considered skill-intensive and farmers in southern Taiwan were treated as laborers rather skilled farmers. Sugarcane research focused on fertilization efficiency and economic outcome and was less about agronomic modification. Unlike the major figure in rice research, the agronomist and Dr. Iso Eikichi, the “engineer” of the Taiwanese sugarcane industry, Dr. Nitobe Inazo (新渡戸稻造), graduated from Sapporo Agricultural College and Johns Hopkins as political scientist. In 1901, his proposal “Rules for Improving Sugar Production” was taken as the guideline for the sugar industry of Taiwan (Ka 1995: 75). To encourage sugar production in Taiwan, the central government of Japan set up a protective tariff that made up for the disparities in production costs between Taiwan and Dutch colonial Java. At the same time, sugarcane contract farmers were constrained by two regulations: the “Price Leverage System between Rice and Sugar” (米糖比價法) and the “Prepay rent for fertilizer and collection” (預付金制度). The former set up a buffering mechanism by stating that sugarcane farmers could not collaborate with the rice farmers since they were competing with the price of rice market. The latter tied the contract cane farmers to the production reinvestment by

requiring their prepayment for official fertilizers and the harvest agreement. These regulations functioned as a protective wall for the colonial government, and triggered several incidents of rebellion by sugarcane farmers at the time (Lu 2007). Compared to the experiences of rice farmers, Japanese colonial administrators ruled sugarcane farmers more like colonists than scientific reformers. As a consequence, sugarcane farmers' historical memories and attitudes towards the governmental agendas became mental module on later policies even after the colonial period. Farmers' ambivalent attitude toward governmental projects mixed an expectation for reform with a suspicion of exploitation. This will be further analyzed in later chapters in the contemporary cases of new agricultural initiatives.

2.3 POSTWAR TRANSITION OF THE AGRICULTURAL AGENDA VIA THE JCRR (JOINT COMMISSION ON RURAL RECONSTRUCTION)

After WWII, the Chinese nationalist government planned different ways to reform its much devastated rural areas and communities. The most significant project proposed was the Sino-American Joint Commission on Rural Reconstruction. Rural reconstruction in Taiwan was not only about the reconstruction of the war-torn countryside, but also, due to the fear of experiences how communists occupied Mainland China via peasants' help, as the propaganda favored the peasants. At the onset, the Sino-American Joint Commission on Rural Reconstruction (hereafter JCRR) reflected the position of US aid as well as postwar U.S.'s troubled feeling toward communist friendly areas in rural China. The position favored scientific treatments to increase

agricultural productivity instead of the promotion of community revitalization by the promotion of community education, and set the tone for agricultural reform in post-war Taiwan.

The statement of the JCRR revealed an urgent need to gain the support of farmers and to increase the welfare of as many farmers as possible. Documents such as “Criteria for Evaluating JCRR Projects” and the “JCRR Manifesto” defined rural reconstruction policies and methods of work that were continued without substantial change after the JCRR moved to Taiwan (Yager 1988: 21). From the perspective of the JCRR, the rural conditions in Taiwan were devastated during the war, and needed immediate reconstruction, just like the case in Mainland China. The difference was that Chinese farmers’ living conditions were worse than those in Taiwan, and therefore the “technologically oriented” trend could be easily implemented in Taiwan without mass education issues such as those James Yen was concerned about in China¹¹. Infrastructure and technology improvement were also the emphases of T.H. Shen and other Cornell-trained JCRR commissioners in their proposal for agricultural technology as the most efficient remedy for rural reconstruction rather than peasant education. The focus of the JCRR and the predisposal of light-industrial based agriculture left by the Japanese reinforced the technological orientation in the rural development of Taiwan that was to come. The JCRR proposed three major land reform programs in Taiwan in order to regulate farming production and profit: tenant rent reduction, sale of public land to farmers, and the compulsory redistribution of excess land by landlords to tenants. These three programs constitute the “understructure” of contemporary agriculture in Taiwan. Of these three strategies, land reform has been the most influential.

¹¹ Initiated by Y.C. James Yen, the Mass Education Movement was a peasant education movement starting in Hebei Province in the 1940s. His idea was that in order to revitalize the war-torn rural areas of China, the major step should be educating the illiterate farmers, instead of carrying out technological research and engineering projects. To Yen, the drive of rural revitalization could only be carried out and perpetuated via the self-help system of farmers after being educated.

2.3.1 Changes in the use of Agricultural Technology after WWII

According to Yager (ibid: 25), up to 1982 there were 43 organizations of agricultural administration institutes and 10,397 scientists employed in Taiwan by these organizations. The organizations that were established by the Japanese colonial government serve in the present day for both practice and demonstration in the first line for farmers or teaching in college. On the other hand, the research institutes founded with the help of the JCRR tend toward provincial administration and international cooperation. The two major research and practice extensions that fit into the first category are the Taiwan Agriculture Research Institute (TARI) and the Taiwan Livestock Research Institute (TLRI). Organizations in the second above category include the Asian Vegetable Research and Development Center and the Fertilizer Technology Center for the Asian and Pacific Region. The Taiwan Agriculture Research Institute was founded in Taipei near the (then) Imperial Taiwan University in 1899 by the General Governor's Office of the Japanese Colonial Minister. It was later relocated to Wu-Feng, Taichung County in 1977. It currently houses an experimental farm of 128 hectares, 7 laboratory buildings, 15 greenhouses, and a number of auxiliary buildings including the National Plant Genetic Resource Center established in 1993. TARI operates two branch stations: the Chia-yi Agricultural Experiment Station and the Feng-shan Tropical Horticultural Experiment Station¹².

The research focus on rice, soybeans, and hybrid corn was a predecessor in terms of influencing contemporary Taiwanese agricultural specialists' alternative initiatives. In order to

¹² The major research achievements of TARI include (Yager 1988: 150): I. Release of new rice varieties with various desired qualities: high yield; early maturity; resistance to diseases, insects, and (parasite) lodging; and tolerance to drought and cold. II. Release of a soybean variety that is large-seeded, tolerant of rust, and resistant to lodging, and another variety that is salt-tolerant. III. Release of hybrid corn varieties that yield 8-10 metric tons per hectare.

highly impact the forefront of agricultural research, the JCRR continued to act as the broker mediating aid and research facilities for two top agricultural colleges in Taiwan, the National Taiwan University and the National Chung Hsing University. The former was the leading university on tropical and agricultural research during the Japanese colonial period, and the latter was formerly a provincial agricultural technician-training institute that was reformed after the end of WWII. As a result of different missions and institutional foci, NTU is famous for its lab research programs, while NCHU is known for training agricultural technicians for extension services.

The pattern and foci of research during the Japanese colonial period were different from those established later with the JCRR effort. For the Japanese, the major purpose of funding the Taipei Imperial University (later National Taiwan University) was to provide a base for tropical research in order to support its "southward" colonial project into the Southeast Asia region (Chang 2003, Ka 1995). The project then extended to the training of local farmers in modern agricultural skills so that they could organize farming units with higher productivity to benefit colonial exports and taxation (Lee 2004). In contrast to these colonial purposes, the research and technological training programs installed by the JCRR, however, included not only high-end agricultural research institutes, but also transformations of local organizations; the 4-H club was representative of this transformation. The purpose of the technology-advancing projects of the JCRR was to redirect small household farming production into industrially-oriented businesses. When the JCRR relocated to Taiwan, the small-scale agricultural projects involved in the "green revolution" such as hybrid rice seeds, applying fertilizer and pesticide for higher productivity, and intensive farming under the design of the manufacturing industry were evaluated. The agricultural technology also served a latent function, by structurally integrating the consumption

of agricultural necessities into the agricultural production chain of the US, such as flour, corn, and soybeans as well as production materials such as fertilizers and pesticides (Liu 2009). The connection highly influenced policy makers' and agricultural technicians' adoption of U.S. farming technology.

2.3.2 Farmers' Organizations and Agricultural Extension Service

In this section about farmers' organizations and extension service, I address the following questions: What is the relationship between the agricultural specialists and the work of farmers' associations? How was agricultural knowledge distributed via the promotion methods of the farmers' associations? In the Japanese colonial period, agricultural extension work was conducted for administrative purposes. The farmers' associations provided primary functions such as negotiating the planting schedule and land use for group labor. Among these institutional changes, there were farmers' organizations and educational efforts that provided farmers with skills concerning agricultural changes. The skills and organizational institutions were later bargaining assets in negotiations with contemporary governmental projects or private businesses as agriculture became more deeply connected with the market. In 1900, the first farmers association was founded in San-Jiao-Yun (today San-Xia 三峡) to promote the use of unclaimed landmasses. The Japanese government used the association for policy promotion as well as agricultural product cooperation. In 1944, following a model previously established in Japan, the Taiwan Agricultural Association Act was promulgated. This act merged all farmers' associations, except the agricultural practice societies, into three levels: province, prefecture, and township. The agricultural practice societies absorbed the business activities of the other village and neighborhood agricultural organizations, and were regarded as supplements to the

agricultural associations. The functions of farmers' organizations were originally for land exploration in the Japanese colonial time: farmers organized in order to bring a unused land into cultivation. However, farmers' association is also government initiation for registration of tenets and country gentries' contribution as they also serve as indirect means of controlling local order. Farmers' organizations in the Japanese colonial period had therefore three major functions: 1) cultivating unused land and organizing patronage from the local gentries, 2) internship venues and distributing new technologies for agricultural (especially rice) improvement, and 3) nominal formats of local representatives through elections for three-tier administration and offices (Lee 2004: 45-48).

When the Chinese nationalist government retreated to Taiwan in 1949, farmers' associations and cooperative societies were important to the regime; administrators intended to manage and cooperate with these local groups. While the Kuomintang/Nationalist¹³ government took land reform as its first and most important means of local control and reclaiming loyalty from tenant farmers, landlords resisted and delayed their cooperation with government on land reform in various ways. However, farmers' associations in the Japanese colonial period were organized mostly by landlords for the purpose of management and for promoting patronage. As a consequence, the Nationalist government also took steps to reform and re-elect the members of farmers' associations at the same time as it was implementing land reform procedures, and combined them with the cooperative societies into a "new type" of farmers association (Chen 陳坤煌 2000: 16-20). Reform efforts provided the newly in power nationalist government basic capacity to predominate local farmer groups to serve the goal of food production. Rent reduction, selling of public land, and land to tiller policies were the first wave of agricultural reform, and

¹³ KMT is a common acronym for Kuomintang, the nationalist party of the Republic of China.

the reformation of farmers associations was the second. Land reform under the direction of the JCRR was carried out relatively smoothly since the landlords were already registered under the categories of land quality during the Japanese period, and at the same time were severed from the connection to governmental nepotism due to the transition of regimes. However, landlords were encouraged to lead farmers' associations during the Japanese time and to pay rent for the groups as patronage to the colonial government; landlords thus held farmers associations as their base once they were influenced by the policies of land reform.

The major issue right after the wartime was to secure the production of enough rice for not only the original six million residents of Taiwan, but also the one million soldiers and civilians who had migrated to the island. For this reason, the Bureau of Food and Supply asked farmers associations to act as retailing contractors of the public grain supply, with the Bureau as the monopoly supplier. Since farmers' associations had granaries and manpower that were more soundly than the governmental institutes', their cooperation was critical to the authority newly in power. As "the only" contractors to the government, farmers' associations had more "bargaining power" with the materials with which they were entrusted (Chen 2000: 44). As farmers' associations were integrated into the work of the Bureau of Food and Supply work that was closely related to agricultural production and technological initiatives assigned by governmental sectors to farmers' associations as follows (see Table 1):

General and consistent work	1949-52	Administering work on grain for fertilizer exchange; helping farmers to build manure compost facilities; producing fertilizers
Irrigation and water supplying system	1950-53	Loans to farmers for threshing machines; subsidies on concrete rice drying fields
	1953	Loans for water pump purchases
	1953	With the promotion own herbicide and drugs for rats, loans for farmers to purchase insecticide sprayers
	1958-62	Loans for cultivators, encouraging farmers to take out collective loans on contract cultivation machines. Purchasing compact planters for rice seedlings.
	1960s	Promotion of the use of plastic cloths on fields in order to keep temperature steady and encourage healthy seedlings.

Table 1: Major subsidies and promotion by the Bureau of Food and Supply during the 1950s and 60s (quoted from Liu 1998: 172).

In the 1950s, with the logistics of postwar recovery of residents and preparation for the burgeoning cold war, Taiwan was assigned to be the food production site with the help of the JCRR. Nevertheless, farmers' associations were no longer as autonomous as they were during the Japanese time. The work assigned by the Bureau of Food and Supply drove farmers' associations into local "food regime" as its agent for the "grain-fertilizer exchange" project as well as "official food retail and store" stations. As a result, while Taiwan had developed a local food regime via the cooperation between the Bureau of Food (now called the Agriculture and Food Agency) and local farmers' associations, it at the same time was gradually drawn into the dependency of the "international food regime" by being closely monitored and planned under the

JCRR and American grain export acts such as the “Agriculture Trade Development and Assistant Law” (a.k.a. Public Law 480), and through encouragement to receive grain importation in the form of the industrial pig farming project (Friedman & McMichael 1989, Friedman 1991, Liu 2009). The threefold mechanism assigned to farmers’ associations (fertilizer distribution, official grain/rice purchase and storage, and loans for new technological materials and contract farming granaries) was built under pressure from both their own running costs and governmental outsourced business. Through this work, farmers’ associations became the de facto local agencies of governmental policy, and bridge local interests with national agendas.

2.4 AGRICULTURAL RESEARCH AND PROCESSING INDUSTRY WITH THE TRANSITION OF AGRONOMIC STUDIES

The major transition of agricultural research institutes from the colonial time to the postwar period is a trajectory of the change of agricultural focus. In 1895, right after the establishment of the Japanese colonial government, the official Taiwan Agriculture Research Institute (TARI) was founded in Taipei, with the experimental field right near the Governor-General’s Office. It was devoted to rice research and the domestication of Japonica rice. In 1899, the government established agricultural research institutes in Taipei (focusing on dairy and vegetables), Taichung (focusing on grains and specialties such as fiber crops, mulberries and silkworms, and tea), and Tainan (focusing on sugarcane, cotton, beans, and later the southern extension into tropical crops) as three major sites of research and extension stations. In 1908, the Taiwan Agricultural Research Institute had already expanded into seven sections: agronomy, agricultural chemistry, insects, plant pathology, livestock, instruction, and general

administration. The division of labor also facilitated the publication of research purposes. In 1908, the first research-based publication on agricultural issues, "Taiwan Agriculture Review" 台灣農事報, was founded (Lee 2002). Since then, not only the agricultural specialists but also the educated interns of the training school started to publish their results of agricultural observation and experiments and shared local observations on the issues. It was designed as a form of royal scientific society like those established in Europe. In 1921, the agricultural research institutes in Manchuria, Korea, and Taiwan were combined under the title "Imperial Central Research Institute." The agricultural sectors in Taiwan included not only the previously mentioned ones, but also special extensions such as sugarcane production, horticulture in Shih-Lin, tea research in Tao-Yuan, agriculture intern training in Chia-Yi, livestock research in Chia-Yi, sugar quality examination in Kaohsiung, and livestock breeding in Ping-Dong (Wang 1997: 21-22). After the war, TARI was directly administered by the Taiwanese Provincial Government. In 1952, TARI was rescheduled under the administration of the Agriculture and Forestry Sector under Ministry of Interior, and added two branches: the Tainan Linen and Cotton Research Station and the Tainan Livestock Research Center. The general format of TARI did not change a lot until 1990, when the mission of keeping and storage of local varieties of seeds was integrated into research and the National Plant Genetic Resource Center was established as part of TARI.

During the Japanese colonial time, major studies were done on agricultural crops for export, including rice, sugarcane, pineapple, citrus, and linen (Kao 2002). The focus on these crops and plants was due to the necessities of export and military consumption. The prewar export items of Taiwan--camphor, tea, and sugar—gradually became secondary agricultural products. Preserved pineapple canning and citrus processing were two burgeoning industries

during the 1930s through food industry development. Agricultural research, production, and processing were connected for the purpose of colonial revenue; such connection also provided new research initiatives of horticulture, fruit trees, and fiber crops for agricultural research institutes.

For the purpose of this study, two cases of the development of industry and research can be taken as examples of the change in trajectory of research and production: one is the rise of starch industry at the end of the Japanese period; the other is the implementation of the feed industry along with the JCRR mission. In 1936, the Japanese colonial government merged 77 pineapple canning cooperatives and factories into two large production facilities in order to attract the investment of Japanese businessmen and so that the industry could be protected by semi-monopoly operation. As a result, farmers could not find alternative buyers and turned to underground factories. The advantage of having larger varieties was to provide farmers opportunities and strategies among different providers and buyers and not being manipulated. Originally, various types of pineapple seedlings were available to the production cooperatives. After the merging, however, there was little bargaining space for the farmers if there was any plant disease on the pineapples or for them to accumulate and sell fresh fruits. Unfortunately, in 1937, there was a major outbreak of pineapple diseases that resulted in the dumping of many affected pineapples. Farmers couldn't sustain the negative impact of such double pressures and turned to other types of cultivation. At that time cassava was cultivated as the raw material for starch to supply the local and export food-processing industries (Kao 2002: 322). The horticulture section of TARI was working on the solution to the infection of the black core of pineapples; though the pineapple research in Hawaii had overcome a similar problem, the solution to the present problem was not obtained by a Japanese researcher until 1939 (ibid: 326).

However, the change to cassava since 1937 among farmers in the mid-Taiwan area had shifted the organization of local production from their previous experiences related to growing pineapple. From the late 1930s to 1950s, the non-rice cultivation in Southwestern Taiwan had been dominated by sugarcane, pineapple, and cassava, which represented the three major food processing industries in postwar Taiwan: sugar, starch, and food canning. The rise of these industries was a transition for agricultural production. As the discussion in the following chapters will show, this connection between the agricultural sector and the industrial sector was is a precondition of how agriculture was joined with other applications in the contemporary setting, including producing biofuels. The consideration of the agricultural problem is no longer one of only field production, but also has a connection to industrial processing.

Other shifting of agricultural production related to certain industrial initiatives is more of a “discouragement” than a promoter. The Sino-American JCRR acted as an agent not only of agricultural revitalization after the war, but also as the executive broker of American postwar policy in Taiwan and East Asia to cultivate the consumption of American exports, especially agricultural products. In the form of food aid and agricultural raw materials, Taiwan was engaged within the consumer chain of American agricultural export. A quote from former US senator G. McGovern in 1964 is a revealing footnote on the mindset of the transition from US aid to international consumption, “Those who received aid today will be consumers tomorrow.”¹⁴ The example here involves the change of feed for hogs: from rootstalk vegetables such as yam or cassava or certain types of human leftovers, to soy cakes or processed corn.

¹⁴ Philip McMichael, *Development and Social Change: A Global Perspective* (Thousand Oaks, California: Pine Forge Press, 2000), pp. 59-74.

Traditionally, Taiwanese farmers fed hogs with “cooked” leftovers, yam leaves, rootstalks, or even seaweed. It was a kind of “scavenger feeding,” to use the expression by economic geographer Earl Shaw (quoted in Liu 2009: 121). Thus, US aid brought two waves of changes for hog feeding and farming to Taiwanese farmers. First, as mentioned, farmers started to feed their hogs with “processed” feeds instead of leftovers. An anecdote by an American sociologist showed the beginning of such aid transition: Taiwanese farmers even used powdered milk from US aid to feed their hogs! Because the powders were convenient and not familiar to the farmers, feeding hogs with “something people don’t eat” was consistent to the principle of scavenger feeding (Diamond 1969: 19). As several types of grains were exported to Taiwan as “food aid” with no immediate consumers, Taiwanese authorities asked agricultural researchers to teach farmers in mixing grains into the “leftover” style hog feed.

The second change was in the supply of corn and soybean, following the flour and protein consumption encouraged by US aid; thus, corn and soy became the major agricultural imports to Taiwan since the 1960s. Originally, the concern of hog farmers was the protein sources in hog feed. From the colonial times to the early postwar years, there was a trading connection between Taiwan and the soybean production area in the northeastern provinces of Mainland China; the soybean cake was imported for hog feed. After the war, import from Mainland China was stopped, and hog farmers were encouraged to use substitutive protein resources as feed. Shredded and dried yam was back on the formula for hog feeding. By the installation of the “General Project of Hog Raising” via the JCRR in 1963, Taiwan started to experiment with a “systematic hog-raising” farm in the Ping-Dong area. Not only was the traditional way of using leftovers for feeding relinquished, but farmers were asked to use processed corn and mixed feed formulas while they participated in the project (Liu 2009: 141).

At the same time, starting in 1958, there were fodder production factories established under the loan and subsidy of the JCRR cooperative project. These factories not only engaged with farm animal feed production but also the cooking oil production. This connection between these feed industries continued until the contemporary bio-energy project. A manager of one major factory of cooking oil revealed to me that all agricultural industries of alternative application are “mill-driven” industries¹⁵. It is necessary for the oil-making company to think of the utility of the residues from the extraction even if they are not used for animal feeding. The point here is to show that, with the platform of JCRR and US aids US agricultural products were able to gain a foothold in Taiwan as an end of the international food regime. The establishment of the “help” in turn not only shaped the diet of Taiwanese people in their postwar daily consumption, but also set the foundation for agricultural business that deeply entangled with local agricultural policies and the international food regime.

2.5 FROM SUBJUGATED KNOWLEDGE TO CONJUGATED PRACTICE

I have discussed the transition of agriculture as institutionalization and as the construction of knowledge during the postwar era in Taiwan. The transition of land, of farmers’ organizations, and of agronomic knowledge all contribute to the recognition of how the agricultural sector has played a role in Taiwan’s later economic miracle, as well as how the focus has changed from first tier agricultural products to agronomic and industrial technologies. The whole process in Taiwan entailed a shift from land-attached native cultivation to “skills” and institution-dependent

¹⁵ Interview with Dr. Tang Lee, Manager of renewable energy department, Shin Ji-hua Co., March 24th, 2009.

agronomies, as the trajectory of double-colonial institutionalization with Japan and with the US. In his article “From subjugated knowledge to conjugated subjects: science, globalization, or postcolonial studies of science,” sociologist Warwick Anderson (2009) comments on how the universal imagination and the anticipation of a system toward the globalization of scientific research has concealed the postcolonial conditions within the making of scientific space and communities. According to his review, actor-network theory pays attention to the articulation and translation of mobilization so that “society, nature, and geography are thus the outcomes, rather than the causes of these mobilizations” (Anderson 2009: 391). However, reminded by the insufficient awareness of Actor Network Theory to the unequal conditions of center and periphery, postcolonial scholars on scientific studies draw attention to a possible problem and “triumphalism” by the western-centric model of scientific success. As Susan Harding observes in her attention to the “multicultural” location of scientific knowledge, the third world standpoint is not the “receiver” of advanced western development, but that “postcoloniality must be a desire, a dream and a vision before it becomes a reality” (Harding, 2008: 16). In that respect, the work of research and practice surrounding the new technology is not only a comparable institute to western-established disciplines, but also a self-transformation of scope that the colonized “followers” can engage with and devote passion to. This is a double effect: on one hand colonial research highlighted awareness of the existing knowledge of the natives; on the other, the formation and shaping of native models is brought out through the work of colonial inquiry as well as the process of emulation of the standard of colonizing sciences.

Comparing the agricultural research and technology innovation between the Japanese period and American aid period in Taiwan, it is obvious that the format of the institutional work is different. Japanese colonial institutes focused on the training of researchers through embodied

experiences. As mentioned in a previous section, the interns and novices of the agricultural vocational schools needed not only to learn modern agricultural knowledge, but also the physical training and economic conduct as local managers of the township. Prof. Su Jun-Chin, former dean of the College of Agriculture of National Taiwan University and director of the National Agricultural Technology Committee, recounted the experience when he was a freshman at the department of agricultural chemistry, then Taipei Imperial University:

We had to wake up early in the morning. To do physical training at seven for an hour was the general requirement, and then we proceeded to our lab to continue the experiments we did the previous day. The instructors were nice but if you didn't pay attention to the procedure they explained to you, you would mess up the experiment later, and they punished the careless ones. You might lose the chance of following advanced experiments. There were many times that we didn't have proper experiment equipment such as beakers, tapper bottles, or evaporating dishes so we learned to blow glasses and make the utensils ourselves! Doing everything from scratch is the best way to learn the general perspective and requirement of the task. During summer and winter recess, we went to farming villages in order to observe the current application of agricultural materials, such as compost made with layers of rice stalks and pig feces. The ratio of the compost making was an important aspect for us, and to learn about bacteria fermentation in the process. Our instructor said at that time, "our mission is to help these farmers. What we do in the lab is different from the setting here, but the point is to think of what the natural environmental process is like, such as temperature, humidity, time, and convenience of material access." It was a very delightful time when your mind was exercised through actual application.¹⁶

To Prof. Su, the practice of making equipment for experiments and doing physical exercises are all part of the training in order to learn the relationship between a researcher and his own objects. The embodied practice in the Japanese period included not only the curriculum in the classroom but also a link to the actual work in the farming environment.

While American aid through JCRR also helped to train agricultural specialists as well as

¹⁶ Interview with Prof. Su Jun-Chin, Dec. 10, 2009

set up laboratories, the focus turned to transplantation of models from the US rather than local activities. By reconsidering the postcolonial critics of the colonial efforts to install or translate scientific research from center to periphery, the integration of agricultural research in Taiwan through Japanese colonial mobilization and the postwar American aid-oriented food regime can shed light on how contemporary agricultural alternative applications are formulated. There were two major approaches to agricultural research that were developed in postwar Taiwan: one was interbreeding and metabolism for higher production; the other was the scaling of food processing and fermentation industries and different use of agricultural materials. In the trade-based model of agriculture in the postwar period from the 1950s to the 1980s, research on crop production and processing was more focused than research on pest control and plant mechanisms in the Japanese colonial time. Different attitudes about pest control and fertilizer application according to the scale of agricultural practice with Han Chinese and Amis have resulted from disparate viewpoints about the boundary or openness of “farms” defined by local specialists. Throughout the transition and change of focus on agricultural application, as well as the different training of agricultural specialists, contemporary practice on two different communities can be understood in terms of its structural background. In the following chapters, how farmers from two different cultures interact with agricultural specialists trained within the colonial and postwar institutions will be discussed along with the perspective on how “native” and “scientific” knowledge is understood and further negotiated with different purposes imposed by government policies.

3.0 CHAPTER THREE: FROM COLONIAL MEMORY TO NATIONAL AGENDA— AGRICULTURAL PROJECTS, GAMBLING NONCHALANCE, AND LAND ETHICS IN XUE-JIA, TAINAN

This chapter is based on ethnographic research of a Han farming community, Xue-Jia (學甲) located in the southwest coastal area of Tainan. Xue-Jia was among the first few settlements established when the last patriots of the Ming Dynasty expelled the Dutch and migrated from Mainland China. Originally a coastal village located on the northern shore of an ancient lagoon, *Tai-Jian Nei-Hai* (台江內海, Tai-Jian Inner Lagoon), Xue-Jia was not an ideal area for farming until the Japanese colonial government built the famous Chia-Nan Irrigation Canal (嘉南大圳) in 1931. The irrigation system created the possibility of a rotational cultivation system of rice, sugarcane, and coarse grains.

The dry and saline lands were transformed into cultivatable fields, and farmers were forced to engage with sugarcane planting for export. The experiences of contract farming and memories of forced cash crop planting with low wages became the basic way of understanding government projects since the late Japanese colonial period (1932-1945). After the colonial period, in order to provide more staple crops for the anti-communist agenda under the Chinese Nationalist government, the original three-year rotation farming design was abandoned. The legends and historical accounts of colonial domination of sugarcane plantations became the

background of contemporary perception of state-initiated agricultural policies. The religious experiences of making a living by an ancient lagoon and working within a rotational cultivation system provided the cultural understanding of opportunities and challenges as a form of “spiritual environment” (Weller 2006). The overproduction of rice and the promotion of an industrial transition reduced available water resources, and drove the coastal farms into coarse grain cultivation. Starting in the 1970s, the emphasis on staple crop production was switched to a dependency on grain importation from the US, and farming in Xue-Jia swayed between the “dormant farm” subsidy policy and coarse grain production as a buffer for importation thereafter. Small-scale farmers either used intensive greenhouse farming with limited water resources, or congregated their open-air farms for contract farmers in larger scale cultivation. For the most recent agricultural project, Xue-Jia was involved in the experimental planting of energy crops.

The evaluation and discourses surrounding the planting of energy crops reflect farmers’ gambling mindset on the policy as well as their tactics regarding communal relationships. Throughout the issues surrounding what they thought were unreasonable management systems, about the weighting conflict involving the feedstock, and the forced monopoly via the farmers’ association, farmers developed an “instrumental nonchalance” (Malaby 2003) toward policy variations. Farmers’ commentaries on and comparison between colonial situations and contemporary plantation problems reveal contested views on the alternative use of agricultural materials. The experimental project with biofuel crops involves not only the knowledge imposed by experts but also the relationship among the local farmers’ association, stakeholders, and contract farmers. My discussion in the end of this chapter focuses on how the professional discourses of technocrats, changing market demand, and the embodied experiences of local farmers reevaluate the biofuel project as “displaced sustainability” under the global political

economy.

3.1 BUN-ZUAN, HIS WIFE SHO-HUI, AND THE ONG FAMILY

Traveling on the road in a suburban area of Tainan County in southwestern Taiwan, it is common to see the traffic of agricultural and private vehicles accompanying each other on the same blacktop road. Heavy and muddy harvest tractors with plowing machines, carried on the truck, move by slowly, leaving straw and dirt on the road behind them. The agricultural vehicles will soon departed from the main roads, however, once the intersection of winding branches leads them to the farming field. I was with Bun-zuan riding in his truck just after we were working in the field. It was around eight pm in the evening and the suburb roads of Xue-Jia were on and off with cars and motorcycles of residents going to the night market, or parents picking up their teenagers from after-class activities. Bun-zuan commented on the scene:

“It is Wednesday today, so people are going out to get something in town. We farmers do not have such a luxury! There are less busy times for me, but even then, I will go to different land owners to discuss the arrangements for next season, go to our ‘corner’ temple for my duty, or stay at home to take care of the farming tools and machines.”

I asked if he wanted his son to take over his roughly fifty-hectare contract cultivation business. “The farming business for me is enough! I don't think my son wants to take over this and I don't necessarily think this business is going to last for a long time. You see, there are more and more smallholders who decide to apply for the set-aside farm subsidies, and by doing contract work for the government we are not really benefiting from such low payment long

working hours as contract farmers. Who knows? 'Heaven wants us to fight so we fight.' There is no definite answer for tomorrow." Bun-zuan turned the truck away from the two-lane road just at the corner and drove onto the small road that leads to his house. The three-story building has a first floor garage and warehouse, while the second floor is used for drying and refrigerating facilities. The building reminds any visitor that its owner is not a poor farmer. However, Bun-zuan doesn't seem to be optimistic about the future of his career:

I have to work tiredly like a dog every day and only got home after nine pm in the harvest season. Although I can make some money, I don't think any youngsters would be able to endure this kind of work for a week, not to mention to take it as their career. Hard work is the fate and destiny of our generation, but not for the next one.



Figure 4. Map of Xue-Jia in Tainan County, Taiwan

Bun-zuan Ong is a contract farmer in Xue-Jia area (See Figure 4). The family business was founded by his father during the early 1970s. Currently the Ong family lives on the outskirts of Xue-Jia Township; their residences consist of two buildings that are close to each other. The

transition of the farming villages in Southern Taiwan is inscribed in the differences between the two buildings. The older building, constructed of bricks with concrete on the surface, was built in the 1970s when the Ong family moved away from the three-section compounds that the Ong lineage has occupied for several generations. It is the living area of the extended Ong family, including the old Ong couple, their elder son Bun-ken (who quits his wage labor job due to a work injury, and helps with minor work at home), Bun-zuan and his wife, Sho-hui, and their two sons. The youngest son of the old Ong couple, Bun-liong, lives in Tainan city and works in a local business.

The newer building is a reinforced concrete and steel supported warehouse with a large garage for their 600 HP John Deere tractor and several farming tools. On the other side of the building, demarcated by a concrete wall, is the Ong family's social space, a rectangular living room where a tea serving set is displayed. Local guests know that if they are looking for Bun-zuan, he should be in this social space in the warehouse instead of in the older building since the older house is the living space of the older Ong couple. During the late 70s, Bun-zuan's father, old Mr. Ong, started working as a contract farmer in addition to cultivating his own land after they moved to this building. It was during this period that the government promoted its policy on large land units and machinery for farming mechanization. In the warehouse, visitors of the Ong family can see a glimpse of the transition to agricultural mechanization: walking type rice transplanter, row crop tractor, tiller, power sprayer, rotary weeder, etc. There are two other tractors parked outside of the house under a metal shelter, older models that are used only when the elder Ong is going to the field with Bun-zuan, if the work in the field is really busy.

Bun-zuan's elder brother, Bun-ken, would have inherited the business if he had not worked as a wage laborer and gotten injured. However, Bun-zuan was loyal and endured to the

farm work; he took over the responsibility when his brothers expressed less interest in staying at home and farming. Bun-ken never got married, and in the village his celibacy causes villagers to gossip about his capacity to interact with neighbors. Since contract farming is a job that requires negotiation among small stakeholders and township officials, the ability to be candid and good in personal relationships are basic traits necessary for such work. I learned indirectly that Bun-liong had once requested that old man Ong sell a piece of his farm land so that Bun-liong could acquire some assets in suburban Tainan. The older Ong refused, but instead gave him some money to be away from home. Due to the potential conflict, Bun-liong seldom takes his own family to reunion with the older Ongs. Even though he was not mentioned much by the older Ongs, as his brother, Bun-zuan contacts him from time to time for family affairs.

Made as a warehouse, Bun-zuan's "new" building is neither bright nor warm. The gray concrete walls cause the living room to feel more like a workshop rather than a place to host guests. The humming sound of the compressor of the giant freezer in the garage makes it feel even more like a mill, since contract farming work also includes drying the harvest crops, soybeans, sorghum, and canola seeds harvested before packing in bags for the local farmers' association.

Next to the living room is a bedroom, and the only wooden bed in it is usually covered by work clothes, packages or fliers from the local administration, and items that are useful for a mechanized farming family such as walkie-talkies, user manuals for tractors, or tool boxes for maintenance. The kitchen is located on the other end of the first floor, past the bedroom. The Ong couple usually dine here in the evening, if there are no visitors; otherwise, they just get takeout food on their way back home from farming. During the harvest season, they have to work until midnight, and Sho-hui will leave money for their teenage sons to get takeout

themselves. She remembers not seeing their sons for about two weeks when it was really busy, because when they returned from harvest work, their sons were already in bed. However, unlike in their parents' generation, they don't ask their sons to help them unless the teenagers wanted to help:

It is the machinery age now. If the youngsters can do something else, I will let them do it. It is not that we have to fight for our lives to earn a living; not like when we were young. You know, we had to do all sorts of things to help the elders in the field, and just barely managed to complete school assignments. We want our sons to focus on their schoolwork rather than to follow the steps of our elders like us.

3.1.1 Marriage and Inheritance in Xue-Jia

Bun-zuan married Sho-hui when he was 28 years old and she was 26, slightly later than most people of their generation. Bun-zuan finished at the local high school and started to work for his father. Both his elder brother and younger brother went to school and worked as wage laborers. Only Bun-zuan stayed home, in part because of his father's request. He learned to drive tractors, grow seasons of field crops (then mostly dry land crops such as green beans, sorghum, feed corn, or canola), and also attended different workshops and demonstrations that the farmers' association provided. He didn't think about finding a wage labor job like his brothers since he considered farming work most stable and it appealed to "his own pace." The older Ongs originally cultivated about 1.2 Jia¹⁷ of land under their ownership, and managed to contract farm more than 12 Jia around the time Bun-zuan joined in his father's work. This was during the mid 1970s, when the government policy of "Paddy Rice Land Alternative Utilization Plan" was

¹⁷ 甲 Jia is a land mass measurement derived from the Dutch colonial time circa 1650s. One Jia is about 0.97 hectare.

newly instituted and transferred paddy rice cultivation into dry grain farming. The contract farmers in Xue-Jia then numbered about 30 and everyone worked a combination of landmass mostly less than 10 Jia. After the policy was announced, the farming of paddy rice was no longer as profitable as it used to be, since the government was deliberately minimizing the focus on rice production and trying to promote the production of other grains. The Ongs decided to expand their contract farming business by first establishing the granary and drying machine with a subsidy from the agricultural agency of the county government. It was 1982 and the subsidy for every contract farmer for investing in facilities was up to 100,000 NTD. The Ongs applied to be a farming household collecting point for coarse grain, and the government guaranteed the price of harvest for five consecutive years. With the new policy, the major mode of production of the staple crop of rice was transformed to contract farming for the government. This was also the Ong's reverse strategy toward government policies: while other farmers were criticizing most of the problems caused by these policies, the Ongs went to farmers' association or township registration to gather information that other farmers didn't pay attention to in order to take advantage of these policies.

Sho-hui's natal family is a large lineage in Xue-Jia. One of the magistrates of Xue-Jia Township during the 1980s has the same last name, Jia (謝), and a distant uncle on her father's side. Although she is from a relatively larger and more prestigious family, this only provided her the chance to go to vocational high school (compared to the middle school that usually was the case for females of her age). Sho-hui had worked in more places than did Bun-zuan. Since the mid 1970s, the options during the process of industrialization were more plentiful for young females, who were considered to be more conforming and complained less in the demanding and repetitive working environments (cf. Lee 2004 on female textile workers in Taiwan).

Sho-hui's father owns a small family farm, and was planting tomatoes in the late 1960s when the Japanese corporate "Kakome" was contracting with farmers in Tainan to provide tomato materials for its canning plant to make condensed juice to ship to Japan. Like other families, Sho-hui's father had some investment in tomato rack installations, which not only helped her father in the newly established tomato farm, but also helped Sho-hui at local farmers' cooperative to do part time packing in order to earn more money. Sho-hui recounts, "It was like the whole town was planting tomatoes, and you could see baskets and baskets of tomatoes that piled by the road, waiting to be collected by trucks from the company. The whole town was packing tomatoes like crazy."

The tomato business didn't last long, however. "KAKOME" Company later reduced the amount of raw tomato it purchased from Taiwan because it turned to Thailand and the Philippines, where dealers offered cheaper prices. Thus, the demand for tomatoes in Taiwan dramatically shrunk. During the heyday of the food processing industry in the 1970s, the Taiwanese government also subsidized linen and textile factories to promote a new type of export revenue. Tainan Textile Company was founded by three famous textile merchants, Hou Yu-li, Wu San-lien, and Wu Jun-Shien¹⁸ who were all from the Xue-Jia area. They made a successful business based on their earlier investment in trading textiles with Japanese buyers, and decided to run the manufacturing business on their own. Sho-hui worked for this company for six years before marrying Bun-zuan. According to her,

These three founders are successful country gentlemen. After they became successful, they also offered scholarships in our township. You know, they are all

¹⁸ They are later the founders of a mega food enterprise of Taiwan, Uni-President Food Inc.

becoming rich because they have a great feng shui site for their ancestors' tombs. Xue-Jia may not be good for rice and high yield cultivation, but there are lots of good feng shui places that villagers talk about. The land, occupied by the Hou family and the Wu lineage as family residence, was said to be a great feng shui site known as "Resting Crow over Pacific Water" (鴉落平洋穴). That's why they became so successful.

Sho-hui explained the merchants' success in geomancy on a daily basis even though she is not a feng shui student at all. Residents of Xue-Jia gossip in everyday life to demonstrate the social relations with or to exemplify the special "spiritual power" of the area, which I will discuss in the following section.

Working in the textile factory was a tiring but valuable time for Sho-hui. The wages were about 12,000 NTD a month in the mid 70s, which was even more than the salary of a stable elementary school teacher. There were also overtime wages that could result in earnings of more than 18,000 NTD a month. However, it was income earned at the expense of physical health and poor labor welfare protection. Working in the textile factories does not guarantee making a fortune, and most of the textile factories have an unofficial rule that female workers are laid off if they get married and cannot do the robust three-shift system (work 8 hours, plus 4 hours for overtime, and general rest for 8 hours). According to the research by the industrial anthropologist Anru Lee, two restrictions—the "single rule" and the requirement that textile machine operators are usually asked to manage more than two types of machines—limit the mobilization of the female textile factory laborers and constrain their choices concerning life (Lee 2004: 41).

Over almost six years of factory work in the outskirts of Jia-Li (another township close to Xue-Jia), Sho-hui managed to help her younger sister enroll in nursing school and her younger brother to finish vocational college. Most importantly, she saved enough money (about 600,000

NTD over all) to secure her parents' lives and earned praise from her father. She said her father always mentioned that she and her younger sister (who also worked several years in a textile factory after graduating from nursing school) had earned themselves plenty of dowry during their laborious time in the textile factories.

The early 1980s was time when the agricultural sector being transformed from hand-based machine farming to a tractor-based type (in which people sit in the truck) of contract farming. The elder Ongs were looking for a wife for their son Bun-zuan—who, contrary to the popular trend of moving to city—continued farming and needed a wife to take care of his family. They learned about Sho-hui through their relatives.

“So your marriage was arranged, and you did not experience free romance before you got married? Why do you want to stay in the rural area instead of going to find other work in an urban area, such as Tainan city?” I asked Sho-hui after I learned about her decision.

“Well... some of my colleagues in the factory also asked me that when I decided to get married at the height of my working there. However, we cannot really get any promotion in the factory as female workers. After six years of work, I found my physical health declining and also learned that lots of fellow workers were too old to marry because they wanted to stay in the factory job as long as they could. The reason that I took the factory job was a means of helping my family instead of going to work in the city. To be honest, once some relative mentioned this arranged marriage to me, I was actually thinking, what a relief that I don't need to stay here for the rest of my life...”

Sho-hui felt pretty satisfied with her decision to quit her job in the textile factory and got married to a farmer. At the time of her marriage, she took only about one third of her savings as the money for dowry; she left the rest of her saving for her parents. Her father had been ill for a while before he finally died eight years after Sho-hui got married, and a major part of her savings was spent for his hospital bills. As she said, her father was very proud and happy to have daughters to support the natal family before their son could get a decent job and take over the

responsibility of supporting the family.

In the living room of the warehouse/office building, there are several red scrolls congratulating Bun-zuan on his wedding and for his election as "section leader" of a farmers' association and as a farmer's representative to the county's agricultural council. These scrolls were presented by Bun-zuan's temple affiliation and by local political figures, recognizing his role as a mid-level leader. Due to his title as local section leader, other farmers and the officials from the township administration are usual guests at his place. Bun-zuan likes to sit on his wooden carved master chair, hosting the guests with tea (or for the gathering with fellow farmers, beer). Sho-hui usually sits by the office desk away from the chairs and tea set, listening to the conversation and jumping in from time to time whenever the conversation hits a point of interest or when she felt that when expressing her opinion is justified. The visiting farmers or neighbors usually do not talk about crop cultivation until the very last part of their conversation. The talk touches upon politics, the change of agricultural subsidiary criteria, monetary calculations of the "saving and credit association",¹⁹ or just gossip. For Bun-zuan and Sho-hui, rotating saving and credit is a good instrument for their financial management. They have members coming over to their house constantly to share information or to discuss the best estimation of monthly interest a member should provide this month. On the contrary, since most of the time they don't need the money urgently due to consistent government funding, they can wait to be the last member to put in rotating savings and get the best bargain (the last member in the rotation does not have to pay for interest, therefore is guaranteed a higher total amount than the other members who are in need of money). Like a neighbor of Bun-zuan said, "The Ongs are really successful as contract farmers. They can even lend money to their friend who is running a small grocery store!"

¹⁹ 標會, the private loan group that functions as a credit union, popular in Taiwan.

3.2 LOCATING XUE-JIA: THE HISTORICAL TRAJECTORY AND RELIGIOUS CONNECTION OF COMMUNITIES

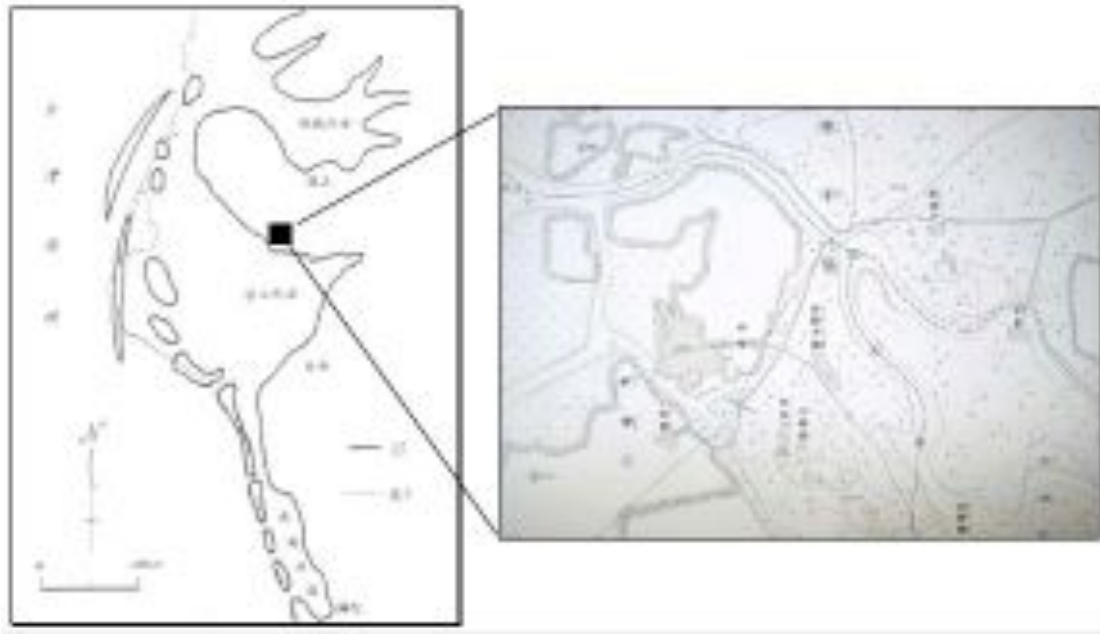


Figure 5. The Coastal Line of 17th Century Tainan, and relative location of Xue-Jia
(Solid line is the coastline of 17th century, and dot line reveals the contemporary coastline)

Bun-zuan's grandfather was a tenant farmer, and owned a little piece of land during the Japanese colonial time through applying for sugarcane plantation work for governmental contract. The Ong lineage migrated from the coastal Tainan to Xue-Jia and gradually found more suitable homestead near the township. The old geographic lagoons of the Tainan coastal region are "Dow-Feng-Nei-Hai" (倒風內海 Back-flowing-wind Lagoon) and Tai-Jian Nei-Hai (台江內海 Tai Jian Inner Lagoon. See Figure 5). Residents of this "founding settlement" of Taiwan were said to be descendants of the followers of the Ming Dynasty's last General Zheng

Chengong (鄭成功 the legendary *koxinga* for given the last name of the royal family of the Ming Dynasty) to Taiwan in order to go against the Qing troops in 1663, and repelled the Dutch colonial regime at the time. In the early 1830s, a flood changed the river course of the Tsen-wen River (曾文溪) and the lagoon was gradually filled by the accumulation of loam.

The names of local villages or landmarks represent images of the coastal landscape, such as Te-gang (宅港 residential harbor), T'jun-ju (中洲 middle shoal), and Ou-wang (漚汪 massive water). Due to the newly developed alluvial plain, grain cultivation has gradually encouraged the introduction of fishing/coastal clam collecting activities. Small hut communities were built over the newly formed saline plain. Several names of local communities implied the connotation of hut ("Liao," such as Xue-Jia Liao and Daw-Fen Liao). Local sites named after the Hokkien term "Liao" (寮) denotes the fact that Xue-Jia residents were constantly shifting their cultivating site as new immigrants came. The exploratory "huts" were only occupied while residents were collecting seasonal coastal goods doing rotational planting.

The Xue-Jia area was originally a plains aboriginal residential region before the Dutch colonial period in Southern Taiwan (1624-1662). The name Xue-Jia was adopted from Shiraya's tribal name as "Siyeja."²⁰ Three major townships, Xue-Jia, Jia-Li (佳里), and Ma-Do (麻豆) are all adapted from plains aboriginal communities. However, the late coming Han settlers from the coast of China outnumbered the original plains aborigines, and the latter were subsumed under the category of local Taiwanese descendants after intermarriage for generations²¹. In the Qing dynasty, Xue-Jia was not as developed as its neighboring township Jia-Li since the latter was the

²⁰ 翁佳音 Wong, 1999.

²¹ With some exceptions on the hilly side of Tainan County where plains aboriginal descendants still practice the bottle shrine worship called "Ali Tzu." See Brown 2006.

residential site of the official court. During the Japanese colonial period (1895-1945), Xue-Jia was again outdone by its northern neighbor Bei-Men (北門) due to it being an administrative center and transportation port. Throughout all these arrangements, Xue-Jia was neither notable in administrative nor economic function. However, Xue-Jia is famous for its major religious activities, “Jon-Be-Da” (上白礁) by the Tzu-Je Temple because it is the hometown for successful entrepreneurs.

Currently, Xue-Jia is a township of Tainan County, and contains around 7,500 households, with a population of 27,000.²² The registered farming population is about 30% of the total population, about 8,400 people, including those who have registered to put farms into dormancy, self-employed farmers, contract farmers, and aquaculture farmers. The “major” agricultural products listed on county statistics are sugarcane, rice, corn, garlic, and greenhouse grape-tomato, and the aquaculture product is milkfish²³. However, local farmers would probably tell you that the agricultural products are predominantly dormant farms, along with green bean and canola for natural fertilizer. Due to the governmental policies adjustment and the limited water supply, the production shifted from rice to coarse grains in two decades since the 1980s. The landscape around the outskirts of Xue-Jia consists of dry fields and aquaculture pools, instead of green paddy rice, which would resonate with the early geographic feeling of lagoons and shoals.

22 In December 2010, the Taiwanese government reassigned its administrative regions and combined five counties into neighboring cities. Tainan County is therefore incorporated with Tainan City, and the previous townships are now all categorized as “sections” under the new city administrative regions.

23 Based on Tainan County annual regional report, 2006.

http://gisapsrv01.cpami.gov.tw/CPIS/cprpts/tainan_county/county/shiech/shiech.htm

3.2.1 Reciprocity between Corner Temples and Households

Since pioneering and early settlement, Xue-Jia traditionally has thirteen "corners" (角頭 Ga'-tao) where different lineages claim their original settlements. Every "corner" enshrines its specific deities as guardian spirits. Temples or shrines of different "corners" are the centers of lineage gatherings and worship activities, such as ritual tributes for the deities' birthdays and major holidays of the lunar calendar. Chieng-Jui Zhosu (清水祖師 "Clear Water Master,"²⁴), for example, is the protective deity of the Ong (王) lineage for building up their residential borough, and the corner temple of the Ong's is called Chien-Bo-Gion (清保宮) temple, which is shared with the Jia (謝) lineage. Chieng-Jui Zhosu is an important deity for Southern Hokkien migrants in general: not only the Ong lineage, but also several other lineages, such as Ku (邱) and Tan (陳), worship Zhosu as well. However, even though different lineages enshrine the same deity, they recognize the deity differently.

Clean Water Master's birthday is the 6th of January in the lunar calendar. As a convenient regulation for the Ong lineage, the celebration is usually scheduled on January the 15th, which is also the lantern festival after the lunar New Year. Every male representative of committee will gather in the temple in order to review the temple work of the year and to reelect committee members. Committee members are determined yearly by divination; however, some key positions of the executive committee of the temple will be appointed by the chair rather than by

²⁴ "Clear Water Master" is said to be a Taoist priest who lived during the Sung Dynasty. In the religious practice of the Southern Hokkien populations, the priest "Zhosu" was famous for his praying for rain and the protection of the crops.

divination. The chair of the committee has to be determined through six rounds of divination. Bun-zuan is usually appointed to serve as treasurer, since his daily work includes going to various households to collect payments for contract farming service. During the farming seasons, farmers or small stakeholders gather at the temple constantly, praying for daily protection, engaging discussion of lineage affairs, or just gossiping.

At the time of the deity's birthday ceremony, every household registered with the temple has to contribute to the ceremonial feast preparation. This is a common obligation that recognizes their position in the temple as a lineage member. For the Ong lineage, every household should contribute 500 NTD for temple maintenance and other responsibilities such as rotational temple clean up and preparing incense materials. The Ongs have no particular farmland property belonging to the temple anymore. However, in another temple, Ji-Ho Gion (集合宮), at the "corner" of the Go (高) lineage, lineage members have donated collective beneficial land in the past as a memorial farm for the recognition of ancestral cultivation and exploration. At the time of the deity's birthday, the farm manager, a devoted old tenant farmer, should present three agricultural products as tributary offerings to ensure the deity's blessing of the agricultural harvest. As symbolic offerings for the local harvest, the agricultural products include a bag of rice husks, a bucket of brown sugarcane extract, and a bunch of corn or sorghum that was harvested during the season (provided as the army provisions for the protecting troops of the deity). The practice of public welfare farming was common in the past among different lineages, but only the Go lineage retains such tradition to date. Other beneficial farms were sold for monetary interests or have been purchased by the members of the lineage for their own use.

The most venerated deity, considered the major spiritual guardian of Xue-Jia, is *Baoshen*

Daidi (保生大帝, the Heavenly Emperor of Livelihood). The Heavenly Emperor is worshipped at the most recognized Tzu-je Temple (慈濟宮) in town, which was founded around 1701²⁵. The earliest Chinese coastal migrants took two wooden figures of the Heavenly Emperor from their hometown, Beda Township, Hokkien of China, and settled in Xue-Jia. The temple has gone through several renovations and expansions before its current state as the center of one of the five most piously devoted worship rims (i.e. Five Major Incense 五大香) in Southwestern coastal Taiwan (Huang 1994, Wang 2010). Every March 11th, all temples of the lineage "corners" in Xue-Jia and from the adjacent townships will pay tribute to the Tzu-Je Temple for the "Jon-Be-Da" (上白礁 "Back to Beda") pilgrimage. It is led by the temple representatives and followed by palanquins and performative groups to the historical landing location of the ancestors, Tao-Jen-Liao (頭前寮 The First Settled Hut), and they worshiped toward the direction of Be-Da County in Hokkien Province, cross Taiwan Strait, in order to remind themselves the ancestral connection. Throughout the Qing Dynasty, the thirteen major corners of Xue-Jia were visiting Be-Da Township in Hokkien every four years. In 1921, when the Japanese colonial government embargoed the cross-strait visit between Taiwanese residents to the mainland, the ritual was then held by the shore (Yeh 2005).

The worship process is also a ritual reenactment of the landing. Taoist priests take a stack of matches from the ancestral shrine in the pavilion by the shore (as resembling the visit back to the ancestral temple in Be-Da Hokkien), with a bowl of water taken from the seashore, and seal both items together in a box, signifying the origins of both fire and water (Yeh 2005, Wang 2010).

²⁵ The founding year is debatable since the very first Heavenly Emperor's statue was brought by land cultivators, who brought the statue only for familial and personal worship. It is debated in several sources about when the first temple was built, between 1696 to 1761. The year cited here is based on the research by folklorist Huang Yu-Hsin (1993) who asserted that the history of the temple began when a stable temple site was erected using bricks in 1701.

The worship site is no longer the legendary “landing” location by the seashore, but now by the riverbank due to natural silting over two hundred years. After the colonial period, due to the strained relations between Nationalist Taiwan and Communist China, the visit to Be-Da’s Tzu-Je Temple was banned by the government again. In 1977, as a substitute for going back to the temple in Mainland, members of the Tzu-Je Temple built a “Boarding Memorial Pavilion” by the riverbank, where the worship could take place. Since then, the Jon-Be-Da pilgrimage takes place every three years, and is sponsored by the county government as an official folklore activity.

Jon-Be-Da is particularly important for the financial bonds of local households. Since representatives of every temple as different lineage corners and local shrines have to accompany with the Heavenly Emperor for the activity, it serves as a form of conspicuous consumption based on the loyalty of corner temples to the “Big Temple” (as the nickname local people use to address the Tzu-Je Temple). The temples of lineage corners are the economic centers of lineage members, while the tributary pilgrimages for the “Big Temple” connecting the corner temples into the web of cross-community economic networking. In the case of the *Jon-Be-Da* pilgrimage in 2009, the Chien-Bo-Guion Temple of the Ong lineage requested each member to donate 500 NTD more than the usual 500 NTD, and the committee members of the temple were directed to contribute more than 2000 NTD for their names to appear on the list displayed on the red scroll. The units of palanquin and decorative carts, *Din-Tao* (陣頭), were donated by lineage members, and cost more than 40,000 NTD. All the carts congregated on the square of the Tzu-Je Temple in the morning, and then marched through major local temples with the sacred palanquin of Heavenly Emperor on the way to the pavilion of the landing commemoration. As Uncle Hun-Bo, another committee member in Ong’s temple, pointed out to me, *Jon-Be-Da* for “Big Temple” is not only a memorial event for local lineages to recognize the interconnection with each other, but

also an occasion to display the success of lineages:

The “Thirteen Corners” are like plants living under the tree of our “Big Temple.” Small plants grow up under the shade and even climb up through the big tree. Every season, the dropped seeds of the plants contribute to the big tree, and the big tree provides leaves and protects the thriving plants from storms. Sometimes different plants compete with each other, and the intertwined stems may be intricate, but each plant will individually achieve its level of growth over the common basis the Big Temple provides us. No matter how well each one does, every plant’s root is based on the solid ground held by the tree. That’s how we see the web of relationships.

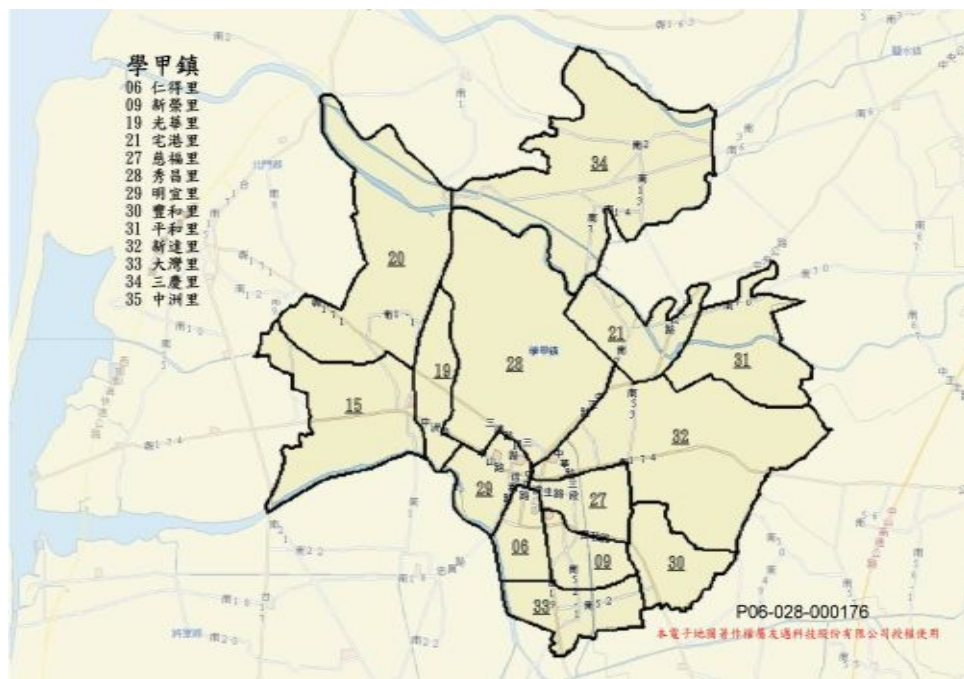


Figure 6. Administrative divisions of Xue-Jia Township
(The Ong family lives in the administrative section 29)

3.3 LINEAGE, TEMPLE, AND FARMERS’ ASSOCIATION: DYNAMICS IN HARMONY

Lineages are the basis to recognizing social networking in Chinese society. Since the late

Qing period, the Han migrants from coastal China settled in the region of Xue-Jia with clusters of the same lineage. The congregation with the same lineage members thereafter provides a norm of reciprocity for local settlers as well as a means of reviewing one's heritage and patronage for those who move away from Xue-Jia and search for better opportunities. In the studies on Chinese kinship in villages, lineage recognition serves as a basic line for tracing one's filial debts to the ancestors (Chun 1996, Oxfeld 2010, Yang 1994). Nevertheless, lineage is not the only force that makes claim on these local issues; religious affiliation with a temple may play another important role in the public domain of networking. The development of temples and ancestral shrines in Xue-Jia provides a dynamic example for how lineages contest each others' alliance and loyalty toward a temple (or, extended from the sites locate themselves). In contrast to the loyalty toward temples that has been developed since the early years (such as the history of the Tzu-Je Temple, as early as the 1700s), the lineages' ancestral shrines were largely renovated as individual buildings since the late 1980s. This is the result of financial feedback to the original township of the lineage members throughout booming economic development. In a commentary by the local elders, such transition is a result of "the wheel of feng shui turning" (風水輪流轉) (Zhao 2005: 63). The situation is usually cited as the turnover of rich and poor throughout the transition of economic conditions in rural Taiwan. During the time of agricultural based production, lineage members who had better economic conditions at home, such as land ownership or less financial burden, would complete middle school education and then run a grocery store or work as local officials in their hometown. Those who were more economically insecure would leave their hometown to search for work. However, economic turnover from agriculture to industrial production resulted in the rise of successful "migrant" lineage members. Migrant members would later repatriate back into the local communities and build modern

ancestral shrines or donate to the local temples.

Temple supporters are usually composed of more than two lineages in Xue-Jia, since one temple may house several deities, who are worshipped by several households at the same time through history. The combined worshipping arrangement provides an effect of managing local conflicts, and temples serve as the venue of decision-making. Although there are thirteen “corners” representing the original exploration lineages and locations where ancestors settled, there are more than thirteen temples in the Xue-Jia area and some of them are visited by followers from other villages. Traditionally, two groups of “officials” preside in the temple, one is “Dan-gi” (乩童) or “Chu-kihe”(手轎) as shamans and “De-tao” (桌頭) as the oracle interpreters, and the other group is temple committee members as managerial staff. Shamans usually come from outside of the village and stayed once the local people recognize their practice. As a result, shamans and their families may have a small but recognizable position in the village. In several villages within Xue-Jia Township, the sons of shamans or oracle interpreters have garnered great support due to their fathers’ influence over the village, and have turned their religio-social capital into political capital and have become head of the village. On the other hand, as mentioned in the previous section, returning lineage members could also claim a major position in running the temple, since they can contribute to the funds for the construction of the temple. As a result, the temples are subject to two influences; one from the local resident and religious sector, and the other from the managerial and repatriated entrepreneurial sector. Furthermore, there is an “official” rule of the temple committee chapter in the Xue-Jia area which reads, “The chair of the temple managerial committee can only be chosen from the lineage members who are NOT registered as local residents” (Zhao 2005: 65). This rule in the temple chapter seems to go against the common understanding of what means to be a “local”

organization. However, it reveals the details of conflict and dynamics between lineage organization and the temple as public space. On the one hand, the temple should not be “controlled” solely by the local sect per se, in order to prevent undue political influence of local heads; on the other, inviting outside lineage members (especially successful entrepreneurs) as important figures of the managerial committee can attract more donations to the temple that cannot be provided by local people.

3.3.1 Loyalty to Corner Temples within Lineage Connection

In Xue-Jia, not every lineage has a particular building for an ancestral shrine; some ancestral tablets are trusted in the corner temples and others have their own building for worship. For example, both the Ong and Jia lineages worship in the corner temple Chien-Bo Gion. However, the Ongs do not have a specific ancestral shrine, and the ancestral worship tablet (“Gong-Ma-Bai,” 公媽牌) is trusted to remain in the temple and is worshipped along with the Clear Water Master. The Jia lineage, on the other hand, has their ancestral shrine in a large pavilion built in 1996. Their worship of their ancestors is separated from that of the Ongs in their own shrine, even though the worship to Clear Water Master is held together. Some of the Ong elders contest the idea of building a fancy and independent ancestral shrine. In their view, ancestral shrines represent “yin” (the underworld power) and the deity temples are “yang” (the heavenly positive power). For a better outcome, “yang” should be overshadowing “yin” rather than having a separate (or even larger) yin representation. However, this can also be explained as quibbling between the local sect and the returning lineage members over the leadership surrounding the lineage’s worship and temple authority.

Loyalty to a lineage's "corner" is not only important for lineage members' for religious rewards or political campaigns, but also for contract farmers in regard to their business. Temple events are occasions when smallholders of the lineage gather to take on specific roles, such as rotational clean up and presenting offerings to the shrine, and therefore are great opportunities for contract farmers to lobby their relatives for their patronage as clients. Theoretically, the patronage and support to the contract farmers, if the smallholders are in the same lineage, would seem to be a sure thing. However, the actual calculation is more complicated than just about belonging to the same lineage. There are twenty contract farming households registered in the local farmers' association, and seven households join the co-op labor force with the contract farmers during the busy harvest season. Nevertheless, the area that contract farmers cover ranges not only within Xue-Jia Township, but also to other townships in Jiayi and Tainan Counties. The contract farming "services" are in competition with each other, so that they can form as much landmass as possible in order to cover all the different phases, including plowing, seeding of cover crops, fertilizing, harvest, and drying before sending them to be weighed in the farmers' association.

The process of applying for contract farming is as follows: the owners of dormant farms who are still registered as self-sustained farmers can apply for "set-aside" subsidies through the township office, and can identify a contract farmer for mutual agreement (in avoiding dispute between officials and smallholders). If the smallholder is open to the options, the township office will assign a contract farmer who is working closest to the land (though this rarely happens). In order to ensure the largest farming scale, the contract farmers will lobby their clients first and then report to the township office with their overall list of clients. There are cases in which a smallholder's farm is located away from the congregation of his lineage

members, and is closer to another contract farmer's regular working area. The owner usually is very likely to reassign his farm to the other contract farmer for the convenience of overseeing the farm work. In order to keep the clients in the lineage, however, contract farmers will visit the temple as often as individual clients to make sure their contract with the smallholders still valid for that year.

Once the smallholder's farm is contracted to mechanical farmers, all the processes in the field are taken care of by them, and the small landholders get subsidies from the township government. Contract farmers try to maximize their social networks in order to lure more customers, so that they can create enough marginal profits. By having enough landmass, contract farmers are able to collect larger quantities of agricultural harvest for wholesale negotiation. Although the "set-aside" policy was created mainly for the purpose of lowering the pressure of rice over-production, it also encourages the substitutive crop plantation²⁶. Nominally, the township officials will come to "inspect" the farms applying for the set-aside subsidy. They will usually come in the beginning of the seeding season, so as long as the type of crop fits with the registered type, the inspectors will allow it to pass. Considering their strategy of doing business, contract farmers are actually running their farming schedule like small entrepreneurs.

In lineage based gatherings or temple activities, contract farmers usually play the role of

²⁶ The first type of substitutive crop is cover crops for maintaining land fertility (e.g. green manure such as canola or green lentil). The second type is animal feed crop, including feed corn and forage grass. The third type is rotational crops, which are for the purpose of providing coarse grain varieties or substitutive dietary consumption, including soya bean, black bean, yam, cassava, sunflower, sesame, etc. And the last type are so-called "nurse crops" or "landscape crops," which are those for the purpose of aesthetic viewing, or assisting in the establishment of perennial crops, such as legume or rapeseeds. It is no secret that contract farmers can also manage to have enough green manure for the farmer's association, as well as leave some area for crops for their own consumption and revenue (such as regular consumption corn, sorghum, or peanuts).

“sedan-chair-carrier” (抬轎仔) for local figures.²⁷ They act like managers monitoring the needs of common supporters, and become organizers for local political figures. It is religious activities and political campaigns that contract farmers are informed about the farming business, which they will utilize to plan for their own business. Other than ancestral worship gathering and temple activities, another important social arena that farmers utilize in order to compete and strive for information and benefits is the farmers’ association. Compared to lineage affiliation and corner-based temples, the farmers’ association is surely a modern institution. It became widely accepted and popular in rural townships in Taiwan during the Japanese colonial period in 1901. Originally a colonial institution for facilitating local support and organizing farmers to enforce agricultural policies, such as collective harvest laboring or teaching new techniques, the farmers’ association was later changed into a financial reservoir and marketing post of local production, as well as a promotion agency for governmental policies and subsidy distribution. The farmers’ association was officially recognized as a regional financial credit organization in 1974 via the promulgation of the Regulation of Farmers’ Associations. The financial function was granted for the convenience of a farmer’s savings and loan related to production. However, the problems in the farmers’ association were exacerbated since the legalization of the association’s credit union as financial resources for local political figures. In Xue-Jia, the election of representatives in the farmers’ association is more competitive than the election of the township major. Contract farmers usually take the position of section head of production cell groups, and support a particular candidate for chairman of the farmers’ association. As a result, 20 contract farmers are divided into 3 groups for the mobilization of the local election. The first

²⁷ As a metaphorical Taiwanese term for this kind of position, these people are usually called “stake feet,” like the founding supports used when building a house.

group is affiliated with the Jia (謝) lineage, the politically powerful one since the township head is currently from this lineage. Another group is associated with the Dan (陳) lineage, the largest lineage with a large descendent group in the An-Nan area near Tainan city (the residents there were originally from Xue-Jia) and holds several seats among the township representatives. The third group of contract farmers is flexible and not particularly affiliated with certain lineage; they consider contract farmers as simple “employees” in the township office and usually identify themselves as a less politicized group.

As a result of “bipartisan” support and a third group of undetermined supporters, the political positions of the township head and the chair of the representative council in Xue-Jia are usually alternate in between members of the Jia and Dan lineages. A consequence of this local political mobilization is that contract farmers are then considered the best contact persons for local communities. Different from the clansmen who are senior or wealthy, or villagers who gather for solving problems or to ask for arbitration, a contract farmer knows very well about land issues related to family decisions, especially changes in financial condition. Contract farmers in Xue-Jia are like messengers, and sometimes mid-level opinion negotiators. Several times I have seen people come to Bun-zuan’s house, have long conversations over certain complaints about the decision from the county government or the temple, and then together rushed to the places of the elderly of the lineage for further discussion.



Figure 7. Local Xue-Jia Farmers Carry the Divine Sedan for Tzu-Je Temple in Jon-Be-Da Ritual Activity

3.3.2 From Lineage Loyalty to Competition in Farmers' Association

A specific rivalry between lineages may result in an arrangement of positions in the farmers' association as well. The farmers' association, as mentioned, is a little financial reservoir, and several groups have interest on getting the position. However, there is a general concern about who has more experiences in community issues, and this has an impact on the result. The regulation of elections for farmers' association is as follows: every fifty registered farmer members can nominate a representative as holding this seat in the local association. There is an upper limit of sixty seats for an association; nine managing committee members and three auditory members will be voted among the seats, and a chair will be selected among the twelve. The general manager is then "selected" among the twelve core members for managing the detailed affairs for the association. In fact, the chair of the committee is usually "upgraded" from

the previous round of general manager; therefore the competition is focused on the outcome of this position. Being a general manager in the farmers' association can have several benefits, including the privilege to access extra money in the form of credit, recommend employers for his own group, and decide on cooperative companies or wholesale merchants for the products by the farmers. With such overwhelming power in a local township, the general manager in a farmers' association is sometimes even more powerful than the head of the town. For contract farmers, it is most important that the general manager can agree or veto the proposal of their loan on large harvest facilities, which is critical to their own business.

A term of office for representatives in the farmers' association is four years. In the spring of 2010, the election for representatives was held, and the position of general manager was fiercely contested since the administrative hierarchy would be rearranged in the following year, which means the structure of "rewarding distribution" would be changed thereafter. In Xue-Jia, the competition between the Jia and Dan lineages was coming up again for this critical campaign. The Jia lineage had their candidate who was the head of the agricultural section in the township office, and Dan lineage had their candidate who was the vice chairman of the township. The two lineages were trying to draw enough votes to their candidates and both lacerated the opponent in relation to their reputation and works. It is because of the close tie that the third group of representatives had a hard time to decide who to affiliate themselves with. Other than these two opponents, a third candidate was gradually emerging and attracted more alliance than the other two. Mr. Lee (i.e. "Old Ming," as known by every contract farmer), who was the head of the agricultural promotion section of the association, and had been in that position for more than 12 years. As many old farmers commented, Old Ming was more qualified than anyone else for the position of general manager, and he had been serving as "sedan-chair-carrier" for the past three

terms. Even Bun-zuan, who is affiliated with Jia lineage because of his wife's connection, agreed that Old Ming is more suitable than other candidate,

The election of the general manager is not the same as selecting the chair of temple managerial committee. It requires experience more than approval from the deities! Old Ming was in the farmers' association for twenty years and in his position of the promotion section for twelve years. He knows how to bargain with the agricultural administrative officials. Like the case of fuel crops over the past few years, he deliberately asked the official to guarantee the purchase after we converted to plant the seeds. Otherwise, as you can see, the pest problem and all those issues about the low yield would have caused us huge debt! Specialists and officials from county government would not care about our production because they are not local! But Old Ming insisted! So we all survived the "experiment"!

In the end, Mr. Lee was elected as the general manager, and local farmers were all thrilled. Farmers jokingly asked Old Ming to take care of himself. During the past years, there were two general managers diagnosed with liver cirrhosis because they had to engage in almost every social activity and were inevitably over-consuming alcohol. Although a joke, this reflects how social skills are important for the general manager of the farmers' association.

3.4 LABOR AND LAND: PROPERTY, STRATIFICATION, AND THE SOCIAL REPRODUCTION OF FARMERS

Temple organization, lineage affiliation, and election to the farmers' association are three different mechanisms of social reproduction in Taiwanese rural communities (Gallin 1966, Harrell 1977, Hsieh 2000, Lin 2009). In her fieldwork on kinship relationship in Xue-Jia area, Taiwanese anthropologist Wei-ping Lin has pointed out that for extended family, local people consider the lineage from the father's side the bone, and the lineage from the mother's side flesh.

This is a social reproduction of kinship relations via the metaphor of human body composition. Through the mixture of two lineages, the influence of kin from the father's side can be recognized as the sturdiness of bone, and the flexibility of the mother's side is as resilient as flesh (Lin 2009: 22). Temple organization is an extension of geopolitical affiliation, where local sects are rooted with temple activities for claiming their status in religious assignment. Temples that are specifically followed and efficacious in coastal lagoon area of Taiwan are those of "Heavenly Lords," (*Wang Yeh* 王爺) whose significance transformed from the deities that brought plague to the mundane world to those who can pacify the epidemics of plague (Lin 2007, Lee 1999). Local sects transcend regular rivalries act as guardian members of the Heavenly Lords by hunting and chasing the plague ghosts during the ritual performance for deities' birthdays. Social reproduction via temple organization depends on the recognition of different contributions and purifications throughout the engagement of ritual practices (Lee 1999: 24).

Social reproduction of the farming sector, involving the farmers' association, work through representative election and combine traditional lineages into the format of "democratic competition." For both contract and smallholder farmers, the purpose of engaging in political redistribution is to extend one's social alliance in order to share recognition on the contribution once the person is on board. Since the farmers' association is a hub for registering short-term farm work, learning wholesale information, and assigning land use changes, farmers have an investment if they have a good "connections" with the representatives or the general manager of the association. On one hand, it is a reinforcing mechanism of farmers' social strata. On the other hand, it can be leverage for farmers who have the ambition to build up their monetary and social capital.

In Xue-Jia, coarse grains' growing is no long a profitable business. The major agricultural

products promoted by the local farmers' association are small garlic, greenhouse tomatoes, and "Noni" fruit²⁸ for company contract planting. The first two are specifically suitable for saline soil since the coastal fields in Xue-Jia do not have an abundance of water located at the tail of the irrigation system. Farmers who choose to contract greenhouse produce and vegetable planting require higher initiative investments and skills than the smallholders or contract farmers who grow coarse grains. Though successful contract farmers need big machines to manage large amounts of land, their skill set is not necessarily different from that required for regular harvest activities. Contract farmers in Xue-Jia refer to themselves as "Zho tzuo gan" (作粗工 "doing heavy-duty labors"), comparing to special techniques and skills required of greenhouse farmers. Even the operation of machinery for massive harvest also requires specific knowledge, the fact that they refer to themselves as heavy-duty laborers is a quip about the investment that they have spent on the machine rather than earning money on the product. Echoing their less profitable work and self-deprecating status, Bun-zuan joked that his loan with the government is always stuck in the credit division of the farmers' association while his machine needs time to "get familiarized" with the farmland:

You think we are wealthy to buy these big tractors and tools? It takes about three years for a tractor to become familiar with the farmland. I can show you my savings account another day, and you can compare it with Uncle Hok, who is running a quarter hectare greenhouse tomato farm. My balance in the account is always negative, since we have to change new machine and use old model tractors as collateral for a loan for a new one. Therefore the figure in my bank account is always negative that I am in debt to government loans. But as for Uncle Hok, his tomato farm has rewarded him with income in the second year of planting. After three years of paying on his investment, the figure in his account must be positive and skyrocketing!

²⁸ Noni fruit planting is a very recent trend, starting circa 2000. Brought back by a merchant from Tahiti, Noni fruit became a new cash crop for local farmers in Southern Taiwan.

Bun-Zuan uses the metaphor of the familiarizing process of the tractor to demonstrate his concern about the loan. Such a “personified” account reflects the “translation” of the financial concern into land ethics and relational networking: it is also a reflection of the “spiritual” aspect of the environment, with farmers engaged with plants as well as machines. Robert Weller (2005) uses the term “spiritual environment” for the case of environmental activists borrowing the efficacy of temple deities as the back up to their movements. The understanding of the environment as the battlefield for spiritual empowerment is similar across different accounts of farmers as they work with technology as well as bureaucracy. My discussion of the land ethics and the application of new technology as property will be expanded in Chapter 5.

3.4.1 Farmer’s Stratification and Alternative Cultivation Project

Farmers in Xue-Jia can be divided into four categories, based on the time and money they have invested into farming: full time farmers in open air fields or in greenhouse facilities; part time farmers who have a regular job but operate a small greenhouse independently; part time farmers employed by other full time farmers; and smallholders who plant short term vegetables or set the land aside for governmental subsidy. These four types of farmers constitute the agricultural labor landscape of Xue-Jia. In a classic article on the typology of farmers in Taiwan, Ka & Wong characterized five types of farmers: the “capitalist farmer” who owns not only land but also machinery, and the rest four as in Xue-Jia: “full-time contracting farmer, petty-commodity-production farmer, part-time contracting farmer, and semi-proletarian farmer” (Ka and Wong 1993: 113). The cases in Ka & Wong’s discussion were from the time when Taiwan was undergoing its economic boom in the late 1980s, and the transition from farming to factory work was in its heyday. Therefore, the part-time farmer phenomenon was a side effect of taking

care of both basic income and the opportunity to find part-time factory work. However, the condition of part-time farmers is now on the other side of pendulum: it is the result of the industrialization of food production as well as higher unit of labor wage, although less labor is needed and less farmland is available. The number of contract farmers is much higher than at the time of Ka & Wong's study because of the set-aside subsidy increasingly imposed after the year 2000 when Taiwan officially joined the World Trade Organization.

Although Taiwan is in a good position based on its tropical agricultural development and resources, its agriculture has reached a new predicament since the domestic policies were put in place to meet the WTO agreements. During the colonial period in Taiwan, the competition between staple crop and cash crop (especially rice and sugarcane) production was determined by multiple factors, including leveraging the Japanese domestic market, military preparation, and colonial control (Ka 1995). This competition was extended after WWII when Taiwan was taken over by the KMT government. Massive agricultural reform was followed by the redistribution of land ownership since the new Nationalist Chinese regime needed to take the control of local farmers. Land reform resulted in farm fragmentation, and private land capital became far less powerful than the state. For the sake of developing new industries and using a coarse grains importation policy to control smallholders, the KMT government hastened to transfer the agricultural investment sector into the industrial sector (Lee 1971).

The planting of sugarcane shrunk dramatically after the end of WWII and turned to rice cultivation for the political condition of constructing Taiwan as a military base against communist China. The transition and mobilization resulted in several consequences for farmland usage in postwar Taiwan. First, rice was considered the major staple crop and attracted major research resources, while other grains were considered less important from the perspective of

farmers and the government (Chao & Tsai 1980). Second, the transition of land ownership from landlords to smallholders was a major reform intended to mobilize traditional social strata by land ownership into different classes. However, cultivable land became fragmented and labor cost increased through time based on the division of land usage. Third, government-controlled coarse grain production, first connected with US grain imports and then WTO agreements, dramatically lowered the selling price in response to international trade. In 1976, when the production of rice reached its highest point, the price began to go down; from 1979 on, the government started to encourage the planting of grains other than rice. This was followed by the policy of “Paddy and Dry Land Alternative Cultivation Project” (水旱田轉作計畫) in 1984, meant to encourage rice farmers to grow other types of grain to protect the price of rice. The result of such “encouragement” was that the area planted with rice decreased 43% by 1999 (Council of Agriculture, 2000). Thereafter, government policy began a new special initiative and asked farmers “not to cultivate” on less profitable farms to protect the rice market, and its price was monitored by the government. In return, farmers are paid to plant green manure to keep their farm fertile. This is the notorious “set-aside” subsidy. In 2004, the total area of “dormant” farms in Taiwan had reached the historical high of nearly 224,000 hectares in total.

After WWII, land reform had made a great impact through the implementation of three major policies: first, to reduce the rent of tenants to 37.5% at most, tiller-to-land transition (the government pay bounds to the landholders and let tenant own the land they were cultivating), and selling public land (previously grabbed by the Japanese colonial corporates_ to privatized farmers. Anthropologist Irene Bain observed the structural change of Taiwan's agricultural reform in Mei-nung, Kaohsiung County in the mid 1980s. According to her research, the First Stage of Land Reform was about the transfer of ownership, especially the tiller-to-land policy to

restructure agriculture, and discontinued between 1955 and 1960. This first stage of reform was focused on land tenure redistribution and transferring major landlords from farming sectors into industrial sectors. The Second-Stage Agriculture Reform has been taking its effects from 1979 to 1984, and was inaugurated for the purpose of land consolidation, and redistribution to aid suburban and rural development. It focused on several issues, including accelerated mechanization, farmland consolidation, group and entrusted farming, promoting rice seedling centers, cooperative farming, and loans for farmland purchase (Bain 1993, 124-138). However, the notorious policy that asked farmers to exchange fertilizers for a certain share of husked rice, to most of the farmers, was a literal way for the government to become the major player in the exchange system.²⁹ Mechanization was the important goal for local government to promote in order to "save" rural labor and provide larger cultivation and harvest landmass. Mechanization was deemed important in order to "save" the rural labor force for urbanization and to cultivate larger areas. While mechanization was promoted and the loans were provided, only farmers who had better income or remittances from family members could afford such machinery. In the case of Mei-nung, farmers who could afford to convert into machine were either tobacco planters or those who had off-farm income (ibid 226).

In Xue-Jia, farmers who were better off financially transitioned to machinery earlier than others. Master Hon-Bo, a distant relative and uncle on Bun-zuan's father's brother side, was among the first group of farmers to convert to mechanization and built a granary as the local grain collection. He worked as contract employee for Agricultural Research Extension of

²⁹ In June of 1974, the traffic of Mei-Nung township was paralyzed by oxcarts full of bagged husked rice to protest the unreasonable exchange rate and inflexible deadline to exchange for fertilizers, while the harvest was not as good that year. See Bain 1993: 175.

Tainan,³⁰ and was experimenting with grain growth conditions in the coastal soil of Xue-Jia. He remembered how competitive it was when the local township office announced the opportunity for loans to buy farm machines in 1978. The first generation of farming machines is still kept in the warehouse as trophies. He commented on the early interest in mechanization:

Government funded machinery was surely craved by most of the farmers. Before working with machines, you have to “hire” people for help. Helpers that are family members are nice, but you don’t want to bother others all the time, and sometimes bargaining over the schedule in harvest season is problematic. In order to get the government funding, you had to demonstrate your capacity to repay the loan and make the first down payment to the bank. I saved some money since I worked with government officials, but the major backup came from my son, who worked in Taipei as the factory worker. Without his help, I don’t think I could possibly make that payment.

Master Hon-Bo was referred to as “master” by the villagers because of the fact that he had worked as assistant to governmental agricultural specialists, and later decided to go back to growing and harvesting his farm in “handmade” style. Local farmers consult him about the cultivation of different crops, timing of planting, choices of materials to apply, and comments on political issues. He acquired only one half jia of land from his original lineage when his brothers demanded to “divide the house.”³¹ During his work for the Agricultural Research Extension, mechanization of farming was the trend, but after he decided to retire from work as a contract farmer, he started to review his fieldwork journals and work on his own farm using his own hand labor. To Hon-Bo, the difference in harvest is about recognizing land quality and labor,

You see, traditionally we farmers consider land the origin of wealth. That is true

³⁰ The obligation of the contract farmer with research extension is to use part of his farm for growing the new crops that agronomists had recently crossbred or developed, and in return the farmer receives monetary compensation and first priority if the crop grows well and is successful on the market.

³¹ Breaking down property for different lineage branches; usually a major event in rural families. Traditionally, only male heirs have the right to claim property via the procedure of “dividing house.” See Cohen 1966.

for sure; without land, you cannot accumulate wealth. However, you cannot get anything out of the land if there is no labor invested in to it; that is, you cannot create wealth without investing labor. One has to make his efforts on the land, and wealth can gradually be accumulated. For people like me, wealth created from investing in hand skills is more rewarding than accumulation. People said, “Land is coming with fate (and can be downgraded), but skill can be carried with you.” (土地在天，功夫隨人) ... If someone got his land without investing labor in it, soon the land would be lost by his laziness and nonchalant attitude.



Figure 8. Master Hon-Bo's Farming Contract with the Government on his Barn

Hon-Bo's words show a mixture of traditional wisdom and modern practicality. While he recites the saying about the importance of industrious work, he also recognizes the practical issue

of labor efforts. In the rural communities, as a result of land reform and mechanization, the help received from collective labor in the past has been greatly transformed. Fragmented lands draw farmer cooperation away from traditional scale, and machinery farming requires less labor to foresee the process of farming congregated landmass from smallholders. Land is limited from investing more labor, and hard labor is outcompeted by either biotech materials or mechanical skill. After land reform, stratification of farmers has been identified by the accessibility of land and labor that can be invested in different scales. Farmers are now not necessarily a static role, but rather a subjective identity. With the criteria of land investment and labor employment types arranged by Ka and Wong (1993), the outcome of stratification is seen through the transition in relation to governmental policies as well as commercial connections to the market. The rural community in Taiwan may be considered a consensual society in which government directs a passive and obedient population toward greater economic growth and in which development is, by definition, unquestioned. In terms of agricultural politics and planning, the predominant emphasis has been technical and focused on farming and farmland, with the underlying rationale being a stable supply of low-price grains. Farmers negotiate on the one hand with governmental policy that has been imposed to manipulate the supply, and on the other with market buyers for possible revenue in addition to the subsidies they received.

The understanding of property by farmers, especially the contract farmers who are using the lands of others for cultivation, depends on government regulation. In Xue-Jia, the average amount of land property owned by contract farmers is about 1.3 Jia (roughly 1.26 hectare), but the mass of land in their contract business ranges between 15 to 20 Jia (14-19.4 hectares); a contract farmer even cultivates the total landmass more than 25 Jia (24.25 hectares). Their property does not include the farms that belong to their customers. However, smallholders

consider contract farmers may have different calculation on the information of land, and keep an eye on the change of policy constantly. The smallholders get only the subsidies for the farm, but contract farmers usually act as external members of the farmers' association and get earlier information about changing land policy. The accumulation of assets of contract farmers is based on labor investment, with or without the help from governmental policy. From the traditional Chinese viewpoint, land is considered as basis of property and one should accumulate as much as possible. However, in the Marxist perspective, the separation of family labor from land is the beginning of privatization and consequently an alienated mode of production (Chanyanov 1966, Edelman 2002, Wolf 1984). From the subjective point of view, labor investment, whether on the land or acquired as a personal skill, is another type of property that can be claimed by farmers. In the discussion of property dispute as moral discourse in Guangdong, China, Ellen Oxfeld explains that, even after the land reform in communist China, local people consider land and house property that is only to be transferred within the lineage. It is generally for local lineage to transfer their right of use instead of trading for goods since rural land property in China. Even though the "dividing" of property for farming is granted in China, local lineages generally transfer their right of use instead of tradition for good, since rural property in China is thought to be collectively owned (Oxfeld 2010: 181). In Xue-Jia, land that is held collectively by a lineage can be divided and sold to individuals provided that lineage representatives are consulted, and the trading of individual or family owned farmland is permitted after tiller-to-land reform. However, the concept of property is not only about the land, but also about the labor that is invested, as described in the discussion of how the investment of labor was and still is an initiating aspect of property recognition. In the following section, I will further explore how farmers negotiate their labor investment onto the land with "fight and gamble" at the same time.

3.5 “WE HAVE TO FIGHT AGAINST BOTH SIDES NOW”: SPIRITUAL ENVIRONMENT, GOVERNMENT PROJECTS, AND FARMERS' AGENCY

Planning and civil construction for changing local farming practices in the previously dry coastal area of Tainan can be traced back to Japanese colonial time. To execute the colonial production goals, the Chia-Nan Irrigation Canal was completed by the famous Japanese civil engineer Hatta Yoichi (1886-1942) in 1931 during the Japanese colonial period. After the construction, the area under the irrigation was designed for a “three year rotatory cultivation system”: the first year for planting rice, the second for sugarcane, and the third for coarse grains or rotatory recess to regain the fertility of the land. Local farmers in Xue-Jia have ambivalent feelings toward the construction of the canal. Farming was surely transformed by such massive and “successful” civil construction, but this does not necessarily mean that farmers’ lives improved. During the process of constructing canal irrigation system, rumor spread about the devastation of the local Feng Shui geomancy composition of the local landscape. Due to the fact that the pronunciation of Chia-Nan (嘉南) in Hokkien language is very similar to "Biting" (咬人), "Chia-Nan Canal” acquired a nickname as "Biting" Canal (Wang 2009). Before the construction of the canal system, irrigation based on local water conduits, which were usually funded by country gentries and built out of the collective labor of local farmers themselves. The construction of governmental engineering work broke local reciprocal obligations based on their contribution to the infrastructure. Furthermore, the irrigation system became a coercive device of the colonial officials to assure the types of crops that were cultivated on the land thereafter, and imposed water taxes onto the poor farmers regardless of the actual income and usage of the canal system.

Local farmers lost their flexibility on the choices of crop varieties, and also lost private transaction agreements with small merchants, as they usually needed during the seasonal transition. As historians and folklorists have discussed, Feng Shui tales in the Chia-Yi and Tainan areas about irrigation engineering work, drinking well construction, or even the resize of water reservoirs, were critical issues that created the "identification" of local communities versus "foreign" forces, may it be newly relocated riches or dominant governmental officials (Hu 1995, Wang 2009).³² For local residents, a Feng Shui tale is a type of discourse that can be used to demonstrate their power and their alliance with local tradition. Unlike the foot-dragging, malevolent rumors, or small-scale damage that the *Weapons of the Weak* by James Scott (1985) has delineated, the Feng Shui legends about the change of civil engineering or infrastructure, on one hand, justified the shift in local power relationships. On the other hand, however, these legends created a new type of affiliation that local residents could attach their identity to, and also to help to explain their understanding of the changes wrought by outside forces. As several examples show in this and following chapters, the discourse and gossip of farmers over governmental civil construction and plantation projects do not justify their "resistance" to the top-down power relationships; rather, these discussions and "talking performance" may show farmers' subjective engagement with the top-down changes.

The legends attached to the building of the Chia-Nan Canal are centered on one major theme, that the construction of the canal went through a precious site of Feng Shui essence and destroyed it. For example, one legend that is frequently cited by Xue-Jia farmers is about the canal branch construction near Ma-Do, where the old Qing Dynasty court was located. Uncle

³² Other than the Japanese colonial government, the new riches of the residents were also possible triggers of the change of Feng Shui conditions through the construction of new ponds, houses, or even digging up new wells. See Hu 1995.

Kim-sun, a contract farmer at Xue-Jia, recounted a story reflecting a theme common to other farmers,

When the canal construction reached the An-Ding area at the southern side of Ma-Do, there was a red stream running from underground during the process of earth digging. All the villagers were surprised to see it, and one old sage commented that it had to be the blood from the “Dragon Vein,” since the Feng Shui of local riches was said to be good, with a “Dragon Dungeon.” People were upset about the work of the Japanese that cut off their local Feng Shui line, and decided later to add two stone lions by the side of the canal branch construction, in order to compensate for the destruction. However, it could not remedy much of the destruction, and thereafter, Ma-Do gradually declined and the administrative office was shifted to Xin-Yin, where the modern sugarcane factory and trading spot was built during the late Japanese colonial period.

With the legend recited by farmers, local prosperity was accounted for in accordance with the significance of the change in landscape and geomancy as proof of a developmental transition. For the development and failing of a township based on new political economic conditions, Feng Shui legends provided extensive explanations as to what people consider during the transition. In his reflection on popular religion and the making of "socio-logics" as culture generates from its rubrics, Steven Sangren explains the work of belief as alienation of production from social relations (Sangren 2000: 6). Local belief of mythical legends is not just a narrowed sense of material changes, but in and of themselves the processes of consumption, circulation, and distribution are moments in the wider processes of social production. As a consequence, the historical system of class relations, political institutions, and regional hierarchy of economic systems constituted contexts within which both local differentiation and cultural integration were constantly being produced and reproduced as effects of people's activities (ibid, 41).

Considering the landscape of the environment as a spiritual reproduction is both an engagement with produced discourses and a reproducing matrix of what is explainable within the cultural context. Going back to the reproduction of local accounts of legends and reactions toward dominant forces, there are two ways of thinking about the rationales for the behaviors and explanations of the dominating force over farmers: following James Scott's idea, Feng Shui legends as weapon of the weak may be fueled for reconstituting political networking while the coercive force is overshadowed by preexisting local power relations. In the wake of resistance and production of dominating discourse, political hegemony not only dominates the reproduction of materials, but also the symbolic forms (Scott 1985: 314). When Feng Shui legends are against "productive" means of cultivation, farmers are encompassed under the realm of legitimacy and yield themselves to the "moral" accounts based on the struggle in everyday life. On the other hand, the legends are reproduced as "alienation" in order to create an idiom of self-reproduction (Sangren 2000:80), so that the recurring accounts of legends and invented discourses to counter the imposed construction is an assertion of local cultural production embodied in individual folkloric performance. Sangren's interpretation may be another way to understand the reason why contemporary farmers appraise the power and effectiveness of the Chia-Nan Canal System even though the legends reveal the destruction of Feng Shui essences. When farmers are considered resistant (using the weapons of the weak) rather than as performers in the political matrix (reciting Feng Shui legends), the differences in how moral and coercive forces are "consumed" and integrated into everyday life do not reflect the historical accounts as a form of social reproduction.

Public health research from the 1960s about this legend and its corresponding area found that the red stream that came out at the time of canal construction might have been the

contamination by arsenic (Wu 2008). After the construction of irrigation canal, the previous drinking water conduits from surface sources were incorporated into the irrigation system; therefore, villagers began to dig deep wells in the area. However, the underground layer just happened to pass through a concentration of arsenic. In a few decades, the red element in local wells increased, so that in the late 1950s, residents in An-Ding, some parts of Xue-Jia, and the coastal Bei-Men area suffered from arsenic poisoning, which is called "Blackfoot Disease". The patients who suffered from Blackfoot Disease had symptoms of deteriorating circulation and nerves in the limbs, especially in the feet. In the most serious cases, people had dark colored skin, deformation of limbs, and body tissues were dying (ibid: 36). Uncle Kim-sun says that people now know that Blackfoot is the result of poisoning, but he doesn't think the red stream is the only arsenic source. People also question why the epidemic spread after the "dragon vein" was cut instead of before the incident. There were also other mysterious events taken as signs of the destruction of Feng Shui occurred during the construction.

3.5.1 Fighting in between Spiritual Legends and Scientific Projects

Since the environment is more than a "scientific" understanding of how natural surroundings can affect the production of farm work and local power relationships, local legends can be understood as a type of "spiritual environment" (Weller 2005). Robert Weller uses this term in order to explain the reaction of NGOs in disputes over environmental conflicts, such as garbage dumping and industrial pollution. The idea of the spiritual environment, according to Weller, is the rubric of protecting the purity of beliefs and ideology that can lead to awareness of the environment regardless its economic effect. To Weller, the "spiritual environment" is a humanitarian approach to behaviors geared toward environmental protection and connects to

traditional Chinese discourse better than the protest and street demonstration (ibid: 126). Unlike the strategy of street demonstrations or rivalries engaged with local politics, religious groups as well as civil groups (e.g. the Housewives' Union) adopt the spiritual environment in order to engage with practical life actions and awareness. Based on what I previously discussed about the resistance and reproduction of social beliefs, the notion of spiritual environment is aligned with the approach of consuming social reproduction in which the belief is "embodied" with the agent in order to transform what is assumed to be of higher social structure. Farmers' appreciation of natural surroundings relate not only to the historical mythical legends about how the political background is formed, but also to their bodily engagement with the immediate environment.

My use of the concept of "spiritual environment" is to help explain farmers' agency in their reflection on the choices, which are mostly limited. One day, when I was chatting with Master Hon-Bo after an afternoon in his field planting sesame by hand, Uncle Hon-Bo drank the wheat tea he made at home and flipped his bamboo leaf hat to cool himself off. I asked him why he didn't use the weeding machine so that one person could finish the work, instead of bowing down in the field a half day, and why he didn't register his land for large scale farming by contract farmers like others, he replied:

Weeding by machine can be bad if you didn't eradicate the roots, therefore hand weeding is still more effective and the results last longer. Strange isn't it? We invent a lot of machines just to find that handwork is better after all. You know, what farmers do is change the environment and provides what is needed for our own and others' living. We are not expecting a great monetary reward but gradually we are tricked by the government since the focus now is on industry. After working with the officials, I realized that what I can do is to use my own hands to fight (bua 搏)... If you fight well, heaven will reward you. But the environment cannot be predictable if changed too much. The change of weather is making our living difficult already, and now we have to "Bua," fighting against both-sides (兩邊都要搏), the weather and the government!



Figure 9. The experimental field on sorghum cultivation in Xue-Jia

“Bua” (搏) in Hokkien has two meanings, one is extended from “Bua-dow” (搏鬥 fighting, wrestling), another is from “Bua-giaw” (搏局 gambling) or “Bua-bue” (搏杯, divination). Such a word is a great expression to indicate the conditions of uncertainty and indeterminacy encountered by farmers, as Master Hon-Bo clearly states it. The natural conditions of a coastal saline field are not an ideal place for farming, therefore farmers have to try to figure out what are the most possible types of crops. In Xue-Jia, the choices are mostly saline-resistant or wind-resistant crops such as onion, sesame, tomato (with the protection of a greenhouse), and other coarse grains. On the other hand, governmental policies may change from one type of mass

production and wholesale subsidy to another from year to year. Farmers have to gamble on whether planting the subsidized crops can really be profitable via the middleman and rewarded for their efforts such as changing the width of field ridges, applying pesticide/herbicide materials, or the loan for contracting another's field for cultivation. Master Hon-Bo reminds me about the case of farmers' agency, to reveal its own predicament and the investment for what smallholder can do with limited resources.

After the end of WWII, the Nationalist government of Taiwan soon transformed the previous sugarcane fields into rotational cultivation areas of paddy farms in order to support its anti-communist agenda. The agenda was well monitored under the JCRR (Sino-American Joint Committee on Rural Reconstruction) Project led by Nationalist Chinese government and American officials. The agricultural research extensions and institutes established by Japanese also incorporated with the policy of "Agricultural Army" (Bain 1993:305-308) so that researchers were encouraged to provide service to local farmers. The "rural reconstruction" project on the one hand improved the living conditions of the farmers, providing them with more mechanical knowledge and accessibility to skills such as seedling and machinery cultivation. On the other hand, policies accompanied by the project, most significantly land reform and the grain-fertilizer exchange program, led to farmers' dependency on state control instead of colonial exploitation. Local agricultural research stations and farmer's associations became the pair that promoted the yearly planned cultivation. As previously mentioned, the over production during the 1970s marked two major changes in agricultural policy: the acceleration of imported crops and the shifting of cultivation from rice to coarse grains in the fields located at the "tips of the irrigation system." Since Taiwan joined the WTO in 2000, the plan was even extended to the "set-aside" subsidy for farmers. The choices of farmers are considerably limited under these

policies. Therefore, there are farmers doing “double farming”（私下耕作）in their fields, which is on one hand applying for the set-aside subsidy and planting green manure as directed; on the other, after the officials have inspected the field, they will prematurely plow the manure into the field and plant short term vegetables or other types of crops that merchants have contracted with them. The problem of policy domination is countered by the flexibility of “illegal” means of double farming. However, as a form of gambling, it is not without risk. Government officials know about this method, though they usually do not enforce the policy. When the market is affected by certain types of crops, the officials will then warn the farmers and ask them to wipe out the illegally planted crops.

From the historical background of the changing irrigation system to the contemporary project of dormant farm subsidies, the fighting and gambling spirit of “bua” reflects the active reassessments of farmers. The construction of the irrigation system altered local political relations, but also provided opportunities engage with the massive transition of agricultural production. Governmental subsidies since the 1970s have provided another arena for farmers to contest and develop new strategies after the large-scale plantation in the colonial period. How the gambling mentality developed into nonchalance is discussed in the following paragraphs.

3.6 THE CONTEMPORARY ENERGY CROP PROJECT AND SCALE MAKING EXPERIMENTS

Sitting in the meeting hall and listening to the briefing by the officers from the Council of Agriculture about the benefits and possible revenues they can earn when the new "farm revitalization project" is launched, the old farmers in Tainan County's Farmers' Association

started to whisper among themselves: "Would this project be a better one than the corn-for-feed project? We tried that last time but the local cattle-feed corn didn't compete with the imported stock and we ended up selling it for a lower price than they told us to expect," one said. Another farmer added, "We had the experiences with several subsidiary projects before, but the government never told us WHAT would happen IF the project didn't work." Listening to the introduction of the project in front of the assembly hall with the dubbing by the farmers, the whole scene felt like an agricultural reality show with real-time commentary off stage. It was mid autumn of 2005, when farmers had a break after finishing their summer harvest and had yet to start autumn cultivation. The local farmers' association in Tainan County usually scheduled one-day courses like "suitable fertilization training," provided by agronomic specialists from the regional agricultural research station. It was the "routine" community service since the 1970s when rice was gradually "discouraged" by governmental food and farming agencies. During the heyday of rice overproduction, farms were redirected to coarse grains production in order to relieve the pressure of low rice prices and structural dependency on US grain imports.

Agricultural resources in Taiwan, though not abundant compared to large countries, is considered flexible and of different potential in different historical time. As the energy issue becomes critical and alternative approaches to substitute fossil fuel are introduced, agricultural practice is newly wed to the idea of energy crop plantation and biofuels producing in order to reduce carbon emissions. Planting crops for the biofuel transition in order to revitalize fallow land seems to be a good idea for combining several functions at the same time. Nevertheless, this is not a novel idea in Taiwan's history. Since the Japanese colonial period, two crops were experimented with for the purpose of military energy consumption. One is ethanol from sugarcane. The first ethanol sugarcane plant was established at Kaohsiung for the Yan-Shui-

Gang (鹽水港, now Xin-Yin 新營 in Tainan) sugar mill, which produced 12,000 liters of ethanol per day in 1916, and up to 402,000 liters per day in 1934 (Yan-Shui-Gang Memorial Foundation, 2001). The ethanol produced was used for fuels (especially jet fuel) in order to cover the industrial and military shortage from the embargo by the allies. Another type of special crop ricinus, a material to produce lubricant for vehicles and jets, was planted in eastern and southern part of Taiwan before Japan was defeated and left. The ethanol from resources other than sugarcane is made from molasses and yams through a fermentation process. At the end of WWII, the total production of waterless ethanol from Taiwan was close to a hundred million liters, making one third of the total production of Japan's wartime industrial usage.

After the war, the “domestic” market (no matter whether it is for Japan or for mainland China) could not be sustained. Since planting rice is encouraged by a guaranteed price and the grain plantation is exempt from certain taxes, the sugarcane fields were gradually used for rice or other grains (Chen 2009: 33-41). As a result, the land originally contracted with Taisugar Company was transformed into staple crop farming, and the ethanol produced from molasses was sold to Taiwan Tobacco and Liquor Company for cooking (Sixtieth Anniversary Report of Taisugar, 2005). In 2005, the Council of Agricultural Affairs joined with several governmental sectors, including the Bureau of Energy, the Bureau of Industry, National Taiwan Agricultural Research Institute, and along with the Sin Je Hua Company joined the project of energy crop plantation and biodiesel production. The resolution of the National Energy Conference decided that the fallow land receiving subsidies and the “grain plantation zones” were ideal for energy crop project for biodiesel.

However, since the decision was made not to focus on bioethanol, which Taisugar has produced before, there were questions about the technical decision: why biodiesel as the primary

products, and why choosing Tainan as the major experimental field? The reason for biodiesel experiment instead of bio-ethanol may be several. Although the Taisugar Company had the production capacity for sugarcane ethanol, they are not getting fallow land subsidies as farmers were. Since the experimental project was to take place in a coarse grains zone, the harvest of oily seeds could be based on existing harvest machines and mechanisms of collection. In addition, the exemplary buses and trash pick-ups were all using diesel engines, which provided higher initiatives than ethanol replacing usage in gasoline engine-based car systems.

The reasons for the experiment took place in Tainan are several. The experiment was based in zones of coarse grain plantation, where the irrigation is less abundant. Oily seed crops such as soya bean, rapeseeds, and sunflower are chosen because they are more tolerant to the condition of drought. On the other hand, although it is called a “zone of coarse grains,” the actual farming activity on the land was mostly green manure planting and plowing back into the soil. Since oily seed crops function similar to green manure, they were considered a suitable substitute that farmers were familiar with. A second reason for the experiment to take place in Tainan is because of the specialty of the Tainan agricultural research station was peanut and bean breeding, which could shed light on oily seed crop plantation. Tainan was also the original area of food processing industry development and small farmers were encouraged to contract with industrial needs since the 1960s. As to not affect current agricultural policies and subsidy systems, farmers were automatically involved into the alternative project of planting oily seed plants as energy crops. Starting in 2005, the project was carried out for three years. The major types of oily seeds encouraged by the government were soybeans, sunflower seeds, and rapeseeds, as suggested by specialists in the Tainan Agricultural Research Extension since they had used some of those materials for oil extraction experiments during the 1980s. To the

researchers, those materials were more suitable for local application. However, even with these “reasonable” conditions, the energy crop plantation still failed after two and a half years. As farmers and professionals may have different explanations for such failure, how agency in memories and rationality reconcile with each other requires further discussion.

3.6.1 Memories from the Past, Instrumental Practice of the Present

Although the policy for energy crop plantation was inaugurated, farmers were calculating differently over this initiative on their land. “What do we have to do in order to get rid of the problematic policy promotion?” Kun-liong angrily asked while we were talking about the transition of farmland usage from sugarcane plantation to fallow and to the most recent energy crop project in Tainan. He had devoted two hectares of farm, originally in the set-aside program, to the plantation of “energy crops”—first season for sunflowers and later for soya beans in 2006. The problem was that the first season came with a serious pest issue that destroyed most of his crops. The following season there was a late monsoon rainfall that soaked half of the crops while the seeds were about to be harvested. Another farmer talked indifferently to angry Kun-liong, “Weren’t you still taking out the land of your ‘ten lineages beneficial farms’³³ (什姓公田) for this project? I would be able to do something on such an amount of land.” This comment showed that he was jealous of the possible allowance for the experiments, since he himself couldn’t get such an allowance. Farmers had gathered at the reception hall in farmers’ association after the first two years of energy crop plantation. Out of 350 farmers who registered

³³ The “lineage beneficial farm” is a form of social welfare organized by the community members themselves. It dated back to the Qing Dynasty when farmers of the same lineage contributed part of each one’s farmland, and used the harvest to provide food or income for the ill and widowed family that couldn’t support themselves.

for the experiment in Xue-Jia, only 40 or so farmers stated that they have managed a positive balance throughout the two years. More outrageous to the farmers is that it was the day when the representatives from the buyer company visited the farmers' association with agricultural specialists of Tainan extension station. They were visiting in order to sample the harvested seeds in storage at the farmers' association. After the harvest of soya bean, the pods and stems were usually mixed with the beans due to the switching of harvest teeth on tractors. However, there is no more incentive for the contract farmers to take out the pods after a very bad seasonal harvest, and the private company was asking the specialists to be the arbiter for measuring the standard of acceptable percentage from the harvest stock. There was surely resentment among the farmers since they were not trying to cheat the company intentionally, but then it was the representative from the company to show indifference in front of a group of angry farmers,

We will see how much of the standard rate should be drawn. Not to dismiss the hard work of you as devoted farmers, but you know, business is business, and we could surely switch to importing beans if it was not for the sake of governmental policy and subsidies. I think we are all taking the subsidies, and it should be fine to let the government evaluate how worthy the project is.

According to the representative of the oil company, crude vegetable oil can be extracted from the oily seeds, and then be converted into biodiesel via a chemical process called "Transesterification." However, as mentioned by several farmers, the idle farms originally planted with green manure in order to retain the fertility of the land attract pests to the adjacent areas. Neighboring farmers were blaming each other for this while they argued about different subsidies. Only the biofuel experimental farms located near the agricultural research institute were reaching the expected yield of vegetable oil, which was about two tons per hectare after 100 days of plantation. Other biodiesel seed farms were only producing 40-55% of the yield or

even less. The indifferent farmer decided to plant sesame with small onions so that the onions could resist and repel pests for the accompanying sesame.

In the interaction among different parties at this event, farmers and company representatives expressed a kind of “instrumental nonchalance,” as Thomas Malaby describes in his research on gambling in a small Greek town (2003: 21). The nonchalance is instrumental because it helps the gambling participant to distract his opponents, and misleads as to the strategy adapted by the game player. For the farmers, the cultivation per se is surely not a gambling game as they invest. Nevertheless, there are three kinds of indeterminacy delineating the relationship between the actor and his uncertain environment, which are cosmological, social and performative indeterminacy. As the weather forecast in the lunar calendar, mythical legends about local prosperity, and argument with government policies can all be part of the determinants for the reasoning about farming outcome, they may as well represent a kind of indeterminacy for farmers to claim for the cases that they don’t have power over.

Weather indeterminacy for farmers is the most common feature for one to argue against the contingency of cultivation outcomes. Master Hon-Bo cited an example from the first season when the farmers’ association decided to jump into the energy crop project of the government. As the farmers know, the planting of beans in the field after rice is harvested is fine during the fall, but it should be after the seasonal point of “Bailu” (白露), one of the 24 solar terms which is after the mid-autumn festival, representing the condensed moisture that makes the morning dew white. However, the time of project inauguration was set. The agricultural specialists from the extension thought the account of the experienced old farmers was an obsolete weather rhythm no longer precisely valid nowadays, and claimed that applying pesticide should bring the desired outcome. However, the pest ova set in the field during the time of set-aside period came out late

after the field was plowed, and indeed cause a huge disaster when the leaves of beans started to shoot. Farmers who were planting close to the research extension had the fallow benefit for pest control, but the majority of other farmers did not have such advantage and condemned the specialists not learning from the experiences.

Because of the conflict between traditional cultural experiences and modern market oriented investment, agricultural initiatives became a type of “game” for local farmers. This also resulted in an “inflation” of the gift economy between farmers and policy-holders, which I will expand upon in the next chapter. In a group chatting, a farmer would say very little about what he had done in terms of caretaking or learning in the process. When asked what exactly he used or did to take care of the crop, he will shy away or make a nonchalant gesture about the case of their “special treatment.” This attitude may be considered a type of performative indeterminacy. Master Lee, who is an engineering specialist at the Agricultural Mechanics Maintenance Station of Xue-Jia (學甲農機站), provides the following observation:

All the people here are using the “label-less” brand to take care of their crops! Pesticides, fertilizers, herbicides, you name it. Although the products are just from the supply stores next to their houses, you won’t see the labels on the bottles or containers. Why are they doing that? To be strategically common with fellow farmers, so that no one can figure out how much another has invested for his work. See those bottles on Mr. Ong’s shelf? Those were bought in the store--I was there on the same day--but he deliberately tore the label off in order to make it a label-less brand.

This pesticide can be understood as an effort to conceal the amount of investment in; therefore, one can negotiate a better price with visiting merchants without exposing the expenses. However, from the perspective of a member in a communal group with similar economic interest,

being common with others can at the same time ethical and practical. Farmers use a label-less brand so that they have the potential to “perform” ignorance in front of the outside members. When I asked someone about the details of chemicals or specific composition or “formula” of pesticide or herbicide, if they have any, the person could always refer to other people who were also present and ask them about their ways of doing it. As a way of collecting information in dealing with others’ performative indeterminacy, a farmer who was referred to would start to exaggerate the usefulness of a type of pesticide he found in a store the other day, and avoid the actual question about the “real brand” and possible combination of what he was applying. The only way to figure out what was in the bottle, or the timing of their usage, was to observe in the field and ask without any other farmers is present. Furthermore, their performative nonchalance also adds up to the mentality of gambling in the wake of the governmental project. In my inquiry about who had registered for energy crop cultivation, local farmers usually would not admit that they had applied for such subsidy. This is partially due to the fact that smallholders usually don’t know the exact regulations after they have contracted with professional farmers for several years. More specific to the underlying land ownership is that smallholders do not want others to know their land is in the government hosted energy crop project since they usually have other plants or growing crops on their land. Afraid of being caught “cheating,” the landowners may give a uniform answer that they are using the set-aside subsidy and the actual deal is to be inquired about with a township official. The nonchalance is then not only using in the competition within the farming group by not showing their possible investment, but also with the outside members so that they may have the least knowledge about the function of their land, and in that way farmers can be more flexible. Some of the farmers even try to transfer the title from farmland to suburban construction land, which can make the land several times more valuable

than that registered as farmland.

However, after three seasons of trying the project had not been as successful as promoted. Farmers who were persuaded to cultivate energy crops did not consider the problem rectified by implementing crops as fuel to take care of the field. The gossips going around the field was the disbelieving to the scale of “we cannot feed the hunger of cars with this type of oil; this is only for bugs,” or “What does the government think of our land? Saudi Arabia?” The farmers even compared the energy crop “experiment” with the failure of the sugarcane industry in the colonial period,

“You see, if we are going in this direction as the government promoted, we are like the fools of the contract sugarcane farmers. Like the old saying, **the most foolish is to grow sugarcane and take it to be weighed by the cooperative.**³⁴ We thought that the Japanese government failed just because it used sugar to make ethanol for fighter planes. Their failure was the punishment from the land that they didn’t treasure the food grown from the land.”

The memory of the past contract and legend from the elders fueled mistrust of the energy crop project. During the colonial period, sugarcane contract farmers were not protected and guaranteed their harvest income, and the colonial government outsourced the weighing to the sugar mill corporative. As the result on the scale “adjustment”, a whole stack of sugarcane, filling a buffalo-cart, was weighed as less than the weight of one policeman during the process, and this became a huge scandal as the news spread over different plantation areas. The colonial state created an uneven arena for the farmers so that they had to conform to the rule, with only comments as resistance. Land was a means of production handled by the farmers, and the meaning was created within the lineage as it was passed down through inheritance. When the

³⁴ The very famous saying from sugarcane plantation in the Japanese colonial time is “第一慙，種甘蔗給會社磅。”

state expropriated the land and alienated production, the inheritance of meaning within the lineage was broken, and the comments on the ethics of land could be read as an effort to justify ownership by the farmers.

While farmers did not directly go against the contemporary project, their account of the example of the Japanese government is to analogize their disagreement with the policy and provide a lay explanation of the pest issue. The protest and discontent brought forth memories of the work under colonial conditions to compare with what the outcome of the present might be. By using an analogical political condition, farmers deliberately highlighted their awareness of the making of a successful agricultural project. Competition therefore became another strategy, no matter saliently or latently. With limited resources, competition in order to find a niche in the governmental project was the way to take advantage of the project before it was over. Farmers gradually adapted “instrumental nonchalance” as gambling in dealing with new initiatives or technologies, so that they could form temporary alliances with those who had resources but compete with their fellow villagers before the outcome was completely clear.

3.6.2 Professional Turns from Mediator to Arbitrator

Not only farmers joined the “game” during the early stage of energy crop plantation project; local agricultural specialists from the Agricultural Research Extension reveal another way of instrumental participation in the energy crop plan. Their work was to help farmers in the areas of productivity, crop improvement, fertilization, and pest control. Since they are considered the first level of scientific agricultural knowledge, their expertise is heavily depended upon by local farmers. Extension specialists are usually responsible for local seminars and short-term training of the farmers, holding demonstrations to promote new policies or crossbreed crop

types when newly out for distribution. The connection between farmers and local specialists of the agricultural station weaves out a practical networking for agricultural knowledge diffusion in order to “capture local knowledge” in the form of a controlled research environment (Sillitoe 2007).



Figure 10. Agricultural specialist helping on the experiment for energy crop in Taisugar Company's warehouse

In the case of energy crops and the biodiesel project, extension specialists played a critical role for promoting the notion of how a “food” crop becomes a “fuel” crop (See Figure 10). First, specialists from the agricultural institute were trying to convince farmers with the

slogan: “renewable farming future starting with set-aside farms.”（農村再生從休耕地開始）。 By promoting the concept of using dormant farms, specialists tried to turn the focus to the previously neglected and set-aside land, and even hinted to the contract farmers that it could be a means of changing the land title if they were interested in buying or selling the land of local farmers. Second, for the purpose of beginning the project as early as the government promoted, agricultural research stations contacted their collaborative institutes in India and Australia to import soya bean seeds for the first season planting. Since the storage of cultivatable soya bean was not enough, and the import from the US were all genetically modified types that they could not plant, the research stations had to request special quota and permission to import seeds from India and Australia. However, the first season’s planting of the Indian and Australian types of soya beans were not suitable to the weather of Taiwan, and all the beanstalks were too short. Even the regular height of harvest tractors could not collect them; contract and smallholder farmers had to change back to smaller hand-held harvest machines. The farmers scolded the specialists asking why on earth they brought them bean seeds that were weak and “*suffered from jet-lag*”?

The specialists were not affected by the jokes or scolding from farmers. In most cases, their ultimate goal was to find out the feasibility of the energy crop project in Taiwan. Their role was “more like an arbitrator than a promoter” (personal communication with agricultural specialist). No matter the result of the project, they had to write a review report about the outcome and the way to redress it. On one hand, during the first few seasons of the project, they encouraged farmers to join so that they had the data to collect; but on the other, it seemed to them this would be a failing project from the beginning. Turning agricultural waste or byproducts into fuel might be a good idea for people who are not dependent on the income of

from farming work, but in the eyes of the specialists, not for them and the farmers. Without continuous backup capital and technologies for turning agricultural products into fuel, as well as the need for biodiesel in rural areas, the science is only a demonstration of “fashion technology” rather than “useful skill.” Since conventional farming is less and less profitable, farmers are devoting their time to agricultural products that have a higher market price. Therefore, specialists knew that farmers would not devote themselves to the unfamiliar new studies on biochemical technology and non-agricultural market since they are not as sensitive to the innovation of new production modes as they are the prices of the products. The following chart shows the cultivation transition within four seasons based on the statistics of four local farming regions.

Area	2006 Spring			
	Soybean(Ha)	Production(Kg)	sunflower(Ha)	production(Kg)
<u>XueJia</u> , Tainan	90	43,300	20	4,200
<u>Yen-Shui</u> , Tainan	100	21,000	15	2,000
<u>Yi-chu</u> , Chiayi	130	50,000	50	25,800
<u>Liujiao</u> , Chiayi	50	14,000	0	0
	2006 Fall			
<u>XueJia</u> , Tainan	130	69,590	15	3,035
<u>Yen-Shui</u> , Tainan	110	69,200	10	1,552
<u>Yi-chu</u> , Chiayi	102	57,704	25	5,540
<u>Liujiao</u> , Chiayi	86	41,304	16	3,565
	2007 Spring			
<u>XueJia</u> , Tainan	253	228,826	63	27,565
<u>Yen-Shui</u> , Tainan	335	385,158	14	1,491
<u>Yi-chu</u> , Chiayi	234	344,727	11	9,143
<u>Liujiao</u> , Chiayi	110	145,280	5	3,920
	2007 Fall			
<u>XueJia</u> , Tainan	178.9	13,426	NA	0
<u>Yen-Shui</u> , Tainan	304.6	90,408	NA	0
<u>Yi-chu</u> , Chiayi	173.85	48,855	NA	0
<u>Liujiao</u> , Chiayi	109.61	65,610	NA	0

Table 2. Statistics of Production of Biofuel Seeds from Four Areas, 2006-2007

At the end of first season, the farmers were complaining to the specialists in the evaluation and feedback meeting. “Doc” Yu, the director of the Yi-chu Division Branch of the Tainan

agricultural station (台南農改場義竹分站), and Mr. Lee (Old Ming), along with the techno-assistant agents from the farmers' association asked the farmers to support the government policy. Although the forerunners of Mr. Yu had concluded from their experiments in the 1980s that planting oily crops in Taiwan is not economically profitable (in the case of low gasoline prices), they didn't have massive production experiences and would like to have learned what could happen with the large plantation model. Based on the relationship between specialists and farmers' households, energy crop plantation was planted mostly by the farmers who are currently under loan with the farmer's association for a larger area of harvest. However, Mr. Yu also expressed nonchalance of "not gambling" over the policy. He considered that such policy was a trial and farmers were taking advantage of double listing their farms as still idle and joining the experiment in order to get subsidies from two sides:

They will only consider the current benefit of what they can get from this season's project. We have told them several times that the longitudinal effect and trust can only be established when the middle merchants see the results of steady supply. But as you can see, farmers are not very good at calculating. The soybeans and sunflower seeds are more profitable in the food industry, which some farmers are selling to despite receiving initial funds from the government. On the other hand, to plant a large amount of mono crop over a farm that has been idle for a while makes it vulnerable to pests. Farmers realize that after the first season and less people want to join the experimental project for the second season. Either way, I am going to type my report based on the unprecedented massive experiment on biofuels.

After all, the specialists were taking the advantage of their farmer friends who were counting on them for contract seedlings, and the farmers were depending on the specialists for their inside information regarding changing policies. As in the case of energy crops, several farmers at the seedling center were taking over the chance of seed harvesting and purchasing new harvesting machines. However, the policy terminated three years after its launching in 2005

and farmers lost their expected profits. Furthermore, idle farmland had been left for so long that the pest problem became one of the unintended consequences. All in all, farmers felt that they were “cheated” by their loyal specialists, and the specialists lost interest in experimenting further with energy crops.

3.7 CONCLUSION: OLD PROPERTY, NEW TECHNOLOGY, AND LAND ETHICS UNDER THE STATE AGENDA

As mentioned in previous examples, the land reform and set-aside subsidy incentives resulted in “farmer’s detachment policies.”（離農政策） Farmers were asked NOT to cultivate by the manipulating policy of the government, which resulted in the major problem of “policy-induced deskilling” As Glenn Stone has discussed in his research on Indian cotton farmers, he found that the problem of rural farmers’ deskilling is not the result of adapting Genetically Modified Cotton species, but rather the degrading consequences of farmer-unfriendly policies (Stone 2007: 81-83). In the case of biofuel/bioenergy experiments in Taiwan, it is conducted through the ways in which that land usage turned to a lure to attract farmers into the mindset of “industrial supplier” rather than “agricultural producer.” However, as the experimental project was proposed from the perspective of the industrial sector and international agro-regime policy, energy crop policy has alienated the local ethics connecting land and social networks. In this case, the state provided a legal channel for the farmers grouping up by using new technology as property initiatives. However, the policy of large-scale experiments on energy crops is also a form of state control through administrative instruments, as promoted in the name of revitalizing idle farmland. Farmers were grouped for the “old property” (the land) they had been holding

onto for decades with or without their lineages, but the “new property” as biofuel technology to connect the industrial channel with agricultural knowledge and experiences was not successfully recognized in this project.

Borrowing from what Robert Weller coins the “spiritual environment,” the idea of nonchalant agency is to evaluate the new initiatives or projects during one’s everyday routine. Nonchalance creates an agency in the sphere of learning the transitional technological application within a natural setting. What is the importance of the nonchalant instrumentality of the farmers going through these state-host “games” and land transition history? Master Lee in the agricultural machine maintenance station provided a story that I would used to connect the nonchalant subjectivity and the rhetoric of land ethics together:

A neighbor of mine, a diligent farmer friend as well, used to take care of his inherited farms very well. He sent his three sons to colleges just by harvesting in good seasons and also was involved in government-rewarded programs for increasing the area of farming. One day he was lured by a friend who said he had great divination results learned from a distant temple. My friend was in the beginning not believing it. But since the result was described so well, accompanied with matching of the number of trees on the landscape of the tomb area where he regularly walked by, the farmer was persuaded to bet some money he just got from selling the seasonal harvest. The night the result was declared, he found the number he bet really matched, and anxiously and eagerly to check the number over again. Since he didn’t notice the car coming from the crossroad, he was hit by the car and later died because of the serious injury. However, the number of the trees was found unmatched with the number he signed later on and neighbors were lamenting that he could get away from getting the “jackpot” but was hit by the car all at the same time.

Master Lee says, although he is a trained engineer, he always believes in the “impermanence.” (無常) Showing nonchalance, he thinks, is the way to keep one’s distance from the uncanny and be cautious of the unpredictable “environment”(環境). I asked him what is the “environment”? Is it about Feng Shui or other religious beliefs? He considers it is not only

Feng Shui, but also the way a man is focusing on his own doing and kept away from other luring attempts. The nonchalance expressed by farmers in the accounts of the biofuel project could be understood via such awareness of the routine. As I am reminded by Master Lee, the unpredictability and uncertainty constitute farmers work against changing government policy and climatic impact in the fields. In the previous discussions of the “spiritual environment” and “instrumental nonchalance” with gambling, my aim is to reveal the whimsical backgrounds of the obstacles faced by the farmer while at the same time how farmers transform the political impact into local explanations of the legends and memories as evidence of ethical practices. Old properties, as defined by lineage connection to the “corners” and to the obligations for lineage groups to farming, are connected to the new technologies of land redistribution and types of crops that governmental institutes forcefully imposed. By the accounts of ethical meaning, on the proper use of land, on the nonchalant attitude toward changes, and on the spiritual connection with farming as local identity, dry land farmers in Xue-Jia reflect on their agency through historical memories, local legends, and the state agenda. My discussion of farmers’ agency will continue in the chapter on the evaluation and negotiation with agricultural specialists about the use of science and experiences.

4.0 CHAPTER 4. AFFECTIVE LABOR AND EMPOWERING POLITICS IN THE ORGANIC TRANSITION: DAYLILY CULTIVATION OF TALAMPO AMIS IN HUALIEN

In this chapter, I use the ethnography of community-based organic farming to examine obstacles to the organic agricultural transition and indigenous land rights as difficulties during the process. I will demonstrate how organic farming and the certification process become the new claims in ethnic differentiation and land attachment by indigenous farmers. My purpose is to show how the appreciation of landscape is connected with affective labor and emotional investment in agricultural practice. I use an Amis community, Talampo (達蘭埤), and its organic daylily plantation as an example. I discuss the process of the transition to organic cultivation in Talampo since 2003, with the help from various non-government agencies. Becoming Taiwan's first internationally certified indigenous community in organic farming distinguishes Talampo from other local agricultural production areas and is a particular attraction to tourists. The relationships with the local farmers' association run by Han Chinese and the forest affairs agency construct an “intimate politics” of local relationships.

Through the process, the difficulties of the organic transition and the help from volunteer agronomists and NGO activists contribute to the identity of the Amis farmers via affective labor. Not only product promotion but also performances on various occasions are derived from the embodied labor and difficulties they have encountered and overcome. The affective labor becomes a surplus value to the recognition and selling of agriculture and ethnic branding. Such

self-identification is also a political act to distinguish the other. The distinction from local Han farmers and unfriendly associations transform the organic certifying process into an identity of “transitional justice.” I will in the end discuss the conundrum of the new developmental model through transitional justice in the Talampo community and its implications for community-based agricultural development.

4.1 LAND OF OPPORTUNITIES AND OPPORTUNISTIC LAND

“We are usually called the ‘*Mapipicuai*’ by the northern Amis, which means the ‘incomplete wanderer’ from their point of view. Well, who knows, the least complete may have the best blessing,” Pastor Patal comments while she is folding the flyers for Sunday worship. Her shining gown overrides the fatigue on her face due to lack of sleep before the organic certification examination last week. Talampo community postpones its Sunday worship from 9 am to 11 am during the daylily harvest season, since everyone still needs to work in the valley on Sunday morning. Pastor Patal’s husband is helping her prepare the flyers, also suffering from lack of sleep due to making organic manure compost with community working unit yesterday. Two assistants of Dr. Wu from the Development of Biotechnology Center, who are helping in the preparation for organic certification, just woke up after a long discussion the previous night. Not long before 11am, villagers are gathering in the church for their weekly ceremony. During the worship, Pastor Patal recites from the Book of Timothy in the Bible in order to recognize the Talampo working unit’s efforts and all of the hardship they encountered. In the atmosphere of the church service, the hardworking farmers in the mountains become faithful worshipers, singing with tears in their eyes.

Talampo is the smallest Amis (阿美族) community of Fuli borough (富里鄉), the farthest from the county administrative center Hualien city of the north. Hualien is about 200 kilometers away from metropolitan Taipei. It takes two and a half hours to travel from Taipei to Hualien and another two hours to travel from Hualien to Fuli by train. Talampo community is located at the northernmost part of the Seashore Mountain (海岸山脈) area in Fuli borough. Its geographic location is bordered on the south by Jioan River (九岸溪), Siuguluan River (秀姑巒溪) on the north, Liushidan (sixty rocks) Mountain (六十石山) on the east, and Yuli plain (玉里平原) demarcated by railway and regular road on the west. Compared to traditional large Amis tribes, Talampo is smaller and composed of family descendents from various lineage origins. It can be considered a “migrant” community due to their ongoing search for resources. Currently, the family lineages of Talampo come from four areas of Amis origin: *Saaniwan* (成功 a township near Taitung County), *Fata'an* (光復 a large Amis group in central Hualien county), *Harawan* (樂合 the northern village of Yuli), and *Kohkoh* (舞鶴 a village across the Yuli plain). The first Amis settlers in Talampo were those from *Saaniwan*, who followed game while hunting and traveled across the Coastal Mountain region from the coastal area to the valley around 1915. They first settled in *Loshan* (羅山 where an organic farming village was constructed by Han farmers), and then moved to *Nafohokan*, which has an abundant water resource³⁵. However it was not secured due to the aggressive Bunun people, another indigenous group, coming over for headhunting. The establishment of the “Defensive Front” (隘勇線) by the Japanese colonial government in 1899, in order to dissuade headhunting by the Bunun people prevented them from

35 According to the “Human Geography Report of Talampo,” published by the Administration of Fuli Borough, Hualien County.

crossing the front and provided secured settlement for the resettling Han/Hakka and Amis people (Huang 2005). The mixed origin of Talampo Amis helps to demonstrate the inner dynamic of the community and its “migrant” characteristics.

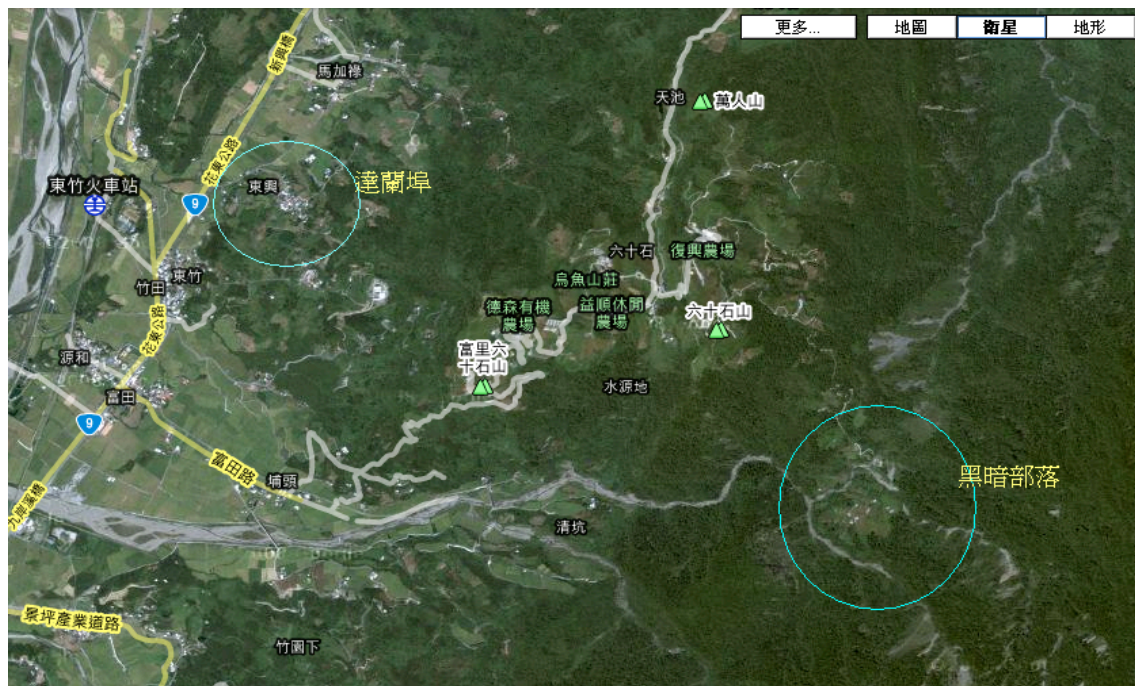


Figure 11. The relative location of Talampo, Liushidan Mt., and the “Dark Tribe”

Because of the remoteness of Talampo from major cities, young people tend to move away from their hometown in order to search for better jobs in cities. Although there are 61 households registered (and 238 residents on the household record), only about 30 houses are occupied by remainders (with roughly 108 residents remaining by the calculation from Sunday worship). The first impression of the village is the desolation of empty houses. Notices of missed postal delivery or delayed electricity bills are attached to the doors of empty houses, which will only be collected by their absent owners during major holidays. The remaining residents are on average 53 years old, and mostly plant mountain daylily or ginger root in the

valley across the mountain, called *Ciharaay* in the past and “Dark Tribe” nowadays. *Hara* is the Amis term for creek fish “goby” in the valley, and therefore the name *Ciharaay* means “the place with *hara*.” *Ciharaay* is commonly acknowledged by the elders as their hunting field as well. Two other traditional territories recognized by Talampo Amis are *Cikailinan* and *Dafdaf*. *Cikailinan* (*kaili* is a kind of insect which is plentiful there) is located at the lower latitude hilly area, where the Talampo people cultivate rice, daylilies or corn; *Dafdaf* (literally plain area) is near the Liushidan Mountain where the mountain daylily planted. The four traditional territories (*Ciharaay*, *Cikailinan*, *Dafdaf*, and the current residential area Talampo) surround Liushidan Mountain, where Han farmers and B&B hosts have occupied the scenic hilltop. The great view of Liushidan Mountain hilltop even wins a nickname for its bucolic scenery: the “Little Switzerland” of Taiwan. (See figure 4.1 for the relative location of these places.)

Resting in the field of Fagi Butal’s daylily farm after a tiring morning of weeding activity, we look over the mountaintop where the fog has dissipated, replaced by the warm sunshine³⁶. The greenness of the grass in *Ciharaay* valley contrasts with the withered yellow of the hilltop; the difference is a result of organic farming in the valley and herbicide sprayed uphill by the Han farmers. “People say Liushidan Mountain is the Little Switzerland, right? I have been living here for 60 years, but I don’t know what Switzerland looks like. Now, it doesn’t look as beautiful as our field down here, does it?” says Fagi Butal, a former elder of Talampo Presbyterian Church. The land from his grandfather’s side was originally on the hilltop about 25 years ago, when there were neither daylily farms nor the fame of Little Switzerland. The natural resources on the top were camphor trees during the Japanese colonial period. Around the 1930s, most camphor trees had been exhausted by timber industries advocated by Japanese government,

36 In Amis language, “fagi” means the male elder, and “vayi” means the female elder.

and replaced by bamboo, which people used for construction materials, or its shoots for a vegetable. This is why the Chinese name for hilltop area is called “Bamboo Field” in local cadastres. At the end of the colonial period, this area was titled to the National Timber Field Sector (林務處) under the National Resource Bureau of Governors-General (台灣總督府), which was succeeded by the Forest Bureau of Nationalist Chinese government after the Japanese were defeated in 1945. Although the mountainous field is claimed by the state, people can still cultivate it as their property.

Roughly about seven hundred Han Chinese residents moved to eastern Taiwan and some to the Liushidan area after the disaster of the “Flood of August 7th” in 1959. They moved from the west in searching of new opportunities. Han migrants cultivated rice in the low land area, and tea trees and ginger on the hillsides; and later daylilies as a higher profit than rice. Because the Amis didn’t have title to the property, the late coming Han farmers took advantage of the land as ownerless, and registered for tenure claim under the policy of “developmental project of forest for agricultural use”³⁷. Fagi Butal originally owned a two-hectare piece of land on the hill, and planted rice and corn alternately with his parents. He left Talampo from 1972 to 1976 when the “Ten Major Construction Projects” (十大建設) were being carried out in the western part of Taiwan. He worked on the construction of the Dr. Sun Yat-Sen Highway during that time, saved some money and returned home, only to find that the land on the hill was now registered under a Han farmer’s name to “legitimize it on the basis of already occupied farmland (山林土地使用就地合法化).” The scale economy of Liushidan Mountain daylily was established during mid

³⁷ “The Liushidan Mountain and adjacent area of more than 200 hectares of land originally belongs to the 72nd, 73rd, and 74th Forest Units of the National Forest Bureau Yuli Branch. Farmers apply for land rental and cultivation in 1959.” Cited from “Outline of Public Claim for Agricultural Use of State-owned Forest Land”, Taiwan Province Government, 1969.

1970s, when the profit of a hectare of daylily harvest was equal to five hectares of rice. Fagi Butal had no choice but to spend about half of his savings from the construction work and some money from family members, about 200,000 NTD in total to buy the land back. The land was planted with daylilies as daylilies took over the rice and bamboo production and became the main cash crop of the area. Fagi Butal had to learn how to grow daylily other than his traditional starchy root plants such as taro and yam for self-sustenance. As a result, he bought his own land back and became a daylily farmer, just like most other Talampo villagers³⁸. Because of the remoteness of Talampo from major cities, young people tend to move away from their hometown in order to search for better jobs in cities. Although there are 61 households registered (and 238 residents on the household record), only about 30 houses are occupied by remainders (with roughly 108 residents remaining by the calculation from Sunday worship). The first impression of the village is the desolation of empty houses. Notices of missed postal delivery or delayed electricity bills are attached to the doors of empty houses, which will only be collected by their absent owners during major holidays. The remaining residents are on average 53 years old, and mostly plant mountain daylily or ginger root in the valley across the mountain, called *Ciharaay* in the past and “Dark Tribe” nowadays. *Hara* is the Amis term for creek fish “goby” in the valley, and therefore the name *Ciharaay* means “the place with *hara*.” *Ciharaay* is commonly acknowledged by the elders as their hunting field as well. Two other traditional territories recognized by Talampo Amis are *Cikailinan* and *Dafdaf*. *Cikailinan* (*kaili* is a kind of insect which is plentiful there) is located at the lower latitude hilly area, where the Talampo

³⁸ The first wave of reclaiming traditional land by Talampo people themselves roughly occurred between 1972-1975. This may be related to the fact that in 1972, a land survey was conducted island-wide. Due to the fact that hilly or valley area cannot be transact among rental Han farmers themselves, Han farmers may try to dececively “sell” the illegally occupied but state-owned land “back” to the indigenous people, in order to get ride of legal issues and at the same time make convenient profit. Thanks to Dr. Yung-ching Lo for pointing this connection out to me.

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were defeated in 1945. Although the mountainous field is claimed by the state, people can still cultivate it as their property.

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starchy root plants such as taro and yam for self-sustenance. As a result, he bought his own land back and became a daylily farmer, just like most other Talampo villagers.⁴¹

4.2 “DARK TRIBE” VS. “LITTLE SWITZERLAND”: THE POLITICS OF LOCAL DISTINCTION

The name *Ciharaay* valley is only valid for the Amis residents; for others, it is presently known by its nickname, “Dark Tribe.” The names *Ciharaay* or “Dark Tribe” are based on different contexts. As traditional territory, *Ciharaay* was used for hunting; later for paddy cultivation; and now for daylily plantation. “Dark Tribe,” on the other hand, is a rather modern perception about the people’s lifestyle in this area. Liushidan (sixty rocks) Mountain (六十石山) is not only a daylily production area today, but also a popular tourist site because of its beautiful scenery and bucolic atmosphere of gentle slope; thereafter “Little Switzerland of Taiwan” from the tourists’ imagination. Although “Dark Tribe” and “Little Switzerland” constitute different aspects of the tourists’ interests in the general Liushidan Mountain area, the development of these two places is totally different.

The land in *Ciharaay* is listed under the management of the Forest Bureau, Council of Agriculture; it is considered state property inherited from the notion of untitled land from the Japanese colonial government. The patrol officials come by *Ciharaay* about twice a month.

⁴¹ The first wave of reclaiming traditional land by Talampo people themselves roughly occurred between 1972-1975. This may be related to the fact that in 1972, a land survey was conducted island-wide. Due to the fact that hilly or valley area cannot be transact among rental Han farmers themselves, Han farmers may try to dececively “sell” the illegally occupied but state-owned land “back” to the indigenous people, in order to get ride of legal issues and at the same time make convenient profit. Thanks to Dr. Yung-ching Lo for pointing this connection out to me.

They count the number of poplar trees among daylily fields, examine the construction of simple shelters built by the Talampo people in order to see if there is any alteration for “private occupation” of the land, and interrogate the farmers about strangers going by who may be “mountain mice” (the nickname for poachers who chopped down state-owned trees or mine illegally). The Talampo people ridicule the officials as their “nannies” because of their routine governmental monitoring efforts: They are protected and monitored by these “nannies” as they nurse the daylilies and the poplar trees for the government in return. However, the farmers on “Little Switzerland” don’t have to go through such examinations every month. Their land, unlike that of the Amis farmers, was already registered as private farmland when all Han farmers were notified by the local officials. The local government considers the daylily scenery of Little Switzerland an attraction, and provides funds for Han ethnic daylily farmers to organize an “agricultural production and marketing organization,” which in turn allows them to apply for more funding for construction on the hilltop.

The notion of “Dark Tribe” is both a construction of the tourist imagination and a result of the neglect of developmental projects. The feature of “darkness” comes from the lack of electric infrastructure, and therefore there are no lights during the night. Actually, in addition to *Ciharaay* valley, there are other “dark tribes” in the mountainous areas of Taiwan. The most famous is *Smagus* (司馬庫斯) people of *Atayal* (泰雅) where the infrastructure for electricity was only built in the late 1980s after the public shockingly discovered that there was still a community without light during the night for elementary students to study by. The Dark Tribe of Talampo is not as controversial as the case of *Smagus*, since usually no one is living in the valley on a daily basis. Talampo Amis only stay overnight during the daylily harvest season or the time for hunting. The lack of electrical infrastructure in *Ciharaay* is the consequence of migration out

of the working fields in the 1970s, when young people from the indigenous communities flooded to the cities for better job opportunities (Huang and Tsai 2008). The traditional territory near the hill, planted with peanut or ginger, became temporarily abandoned and was occupied by newly arrived farmers, or sold to Han farmers for a very low price. With the decrease in wages and fewer job opportunities in urban areas, Talampo repatriates went back to their homes and wanted to buy back their lands. They found that their lands were either announced as state property by the Forest Bureau, or seized by Han farmers who would “sell” the land back to Amis farmers at ten times of the original price.

With no political representatives to lobby for infrastructure, and with restrictions on shelter construction by the forest conservation unit, the “Dark Tribe” remains unwired today. Narrow lanes and simple bridges were repaved after the severe damage to the blacktop road by a typhoon in 2005. At the same time, the Han farmers on “Little Switzerland” were troubled by a lack of water supply since their location on the hilltop made it hard to collect enough rainwater during the dry season (from October to April). In order to find a solution to the water shortage, the farmers’ unit of “Little Switzerland” proposed to the county government to run a long pipeline to conduct and pump water from the *Ciharaay* valley creek to the hilltop, covering 400 meters in altitude and 4000 meters in length. At that moment, the Amis people are finally being consulted by the Han farmers for two reasons: first, the designated route of the water pipeline was mostly in the indigenous reserved territory (although still under the supervision of the Forest Bureau) and any construction had to be approved by the local indigenous people. Secondly, there was a budget for the development of indigenous communities, which hasn’t been accessed previously.



Figure 12. Pipe Tank and Water Compressor from the River to the Hilltop

The construction of the pipeline was finished six months after the proposal. It cost about 10 million NT dollars to set up the pipeline and pumps. The irony, however, is that the budget was for the development of the indigenous community and construction is on indigenous land, but the Talampo people have not been benefited at all from the project. I walked along with A'dop, a Talampo farmer in his mid forty's whose daylily farm is closest to the hilltop, and who is considered the gatekeeper/messenger of the "Dark Tribe." He complains that he needs to keep an eye on the water pipeline for the Han farmers as they usually come over to ask him to repair minor leakage of the pipe.

“During the typhoon season, the *Bailang* [referring Han people by the Amis]⁴² even ask us to look after the pipeline for them. But they never showed up when the creek is flooded and the pipeline is endangered. We have to do the repair work. Some Han farmers even take ‘mountain mice’ with them to look into the mining area, and ask us not to reveal this to the authority. We won’t, of course. *We are still neighbors*. But it is hard to explain to the patrol officials when they later find out and didn’t get the report from us. We become the two-faced ‘spies’.”



Figure 13. Unintended Scene of the “Shadow Grown” Daylily Field

The farmers’ production unit on Little Switzerland has 37 households with 3 seats in the general farmer’s association of Fuli borough, in which Talampo has only one, elected in 2008,

42 “Bai-lang” is a term connotes ethnic bias and conflict. It is based on the Minnan term “Paai-lang” spoken by Minnan Han Chinese in Taiwan, which means “bad guy.” This term is “borrowed” by the Amis in referring to the Minnan Han Chinese themselves.

and had none at all in previous years. Only when there are policy concerns with the budget or construction project that take place on Talampo land, will the Talampo Amis be notified. Talampo people usually learn about the decisions about public construction by the chatting with “neighbors” from Little Switzerland who are coming to ask for help, or by driving to the Specialty Shop for Talampo Signature Goods, the only Amis representation in Little Switzerland.

In 2007 the “Specialty Shop for Talampo Signature Goods” (達蘭埠特產展售中心) on the hilltop, among the shops and daylily fields of “Little Switzerland,” was constructed with bamboo, reed, and woody materials, in order to resemble a tourist attraction. Different from other buildings and recreation houses made of concrete on the hilltop, it is rather small but stands out among the pale style of other resorts on the hill. From the Specialty Shop, there is a great bird's eye view of the rice paddies on the Yuli plain, and tourists usually stop by and take photos. Different groups, one made up of tourists and one of resting Talampo people, usually occupy two tables arranged outside of the booth. Sometimes tourists walk around the Talampo resting table and ask: “Are you guys hired workers? Where is the host of the Specialty Shop?” The Talampo people will shout to the inside of the Specialty Shop, “Hey, *LaoBanNian* (common term for hostess in Chinese), somebody wants to buy a drink!” One of the women drinking together at the “Talampo table” will stand up and say, “Well, here I am, how may I help you?”

The distinction between Little Switzerland and Dark Tribe is mostly related to political resources and lifestyles. However, the distinction is created through interaction with various agents, with experiences of incorporation or humiliation; Talampo people learn and respond to these situations via ridicule or gossip, with farmer neighbors, forest bureau officials or tourists. Unlike the politics concerning the relationships between two different ethnic groups with their boundary negotiation (cf. Barth 1969), the relationships between Talampo farmers and related

agents are not about who they are, but rather about how they are treated. The distinction between Dark Tribe and Little Switzerland also extends to the way they are or are not advertised to the public. While Little Switzerland was promoted by the local farmers' association for its beautiful scenery, which is even advertised in a TV drama on the story of a daylily planting family⁴³, the "Dark Tribe" area was considered less developed and difficult for tourists to access and therefore out of the picture of local tourist promoting agencies.

Nevertheless, such inconvenience and underdevelopment has become an attraction and focus of debate in recent years. Because the "Dark Tribe" is not as overexploited as all artificial resorts like "Little Switzerland," curious tourists start to spread the fame of the "Dark Tribe." Contrary to the anticipation of local travel agencies, it attracted backpackers and indigenous culture lovers. In addition, it fueled the debate surrounding electricity infrastructure when the local government decided to light up the "Dark Tribe." The electric poles came to the valley three years after the water pipeline was built, but now the opinion on whether there should be electricity in *Ciharaay* is divided. As a BBC reporter put it in a news report:

"It has opened up a divisive debate among the tribe about their own future, particularly between the young and old.... Community elders, like 66-year-old Potal, are keen to see electricity installed. 'I really, really want power in the village,' he said. 'I've been living there for so long, but now I want to enjoy some modern facilities.' Masawo, 28, used to work in the city but returned to the village when his parents died. He talks of a special community spirit, which he fears may disappear forever. 'Without electricity, people get together after work; they share things with each other, tell stories. I think it's a better life.'"⁴⁴

The reporter might leave the impression that the debate over modernity is contested between the young and old of the Talampo people over the matter of electricity itself. However,

⁴³ "You Are My Only One 你是我的唯一," Public Broadcast Station Taiwan 2008.

⁴⁴ <http://news.bbc.co.uk/2/hi/6987611.stm>

the debate is an extension of a quiet and difficult transition of the Talampo farming community, and intertwines with the affective labor of the Talampo working ethics. I turn to the process of the organic farming transition in Talampo in the following section.

4.3 “WHEN IT COMES TO MARKET, NO ONE CARES ABOUT EXCHANGE ANYMORE”— EXCHANGE LABOR, MORALITY, AND LIFE IN THE VALLEY

Talampo has four major family lineages from different places. Despite such differences, villagers use exchange labor as mutual help for each household. Traditionally, the help is carried out not only with farming activities, but also on occasions like the building of houses, marriage preparation, hunting events, and funerals. The scheduling of exchange labor is usually arranged by family connections and proximity. For example, the exchange labor of the farm work in *Ciharaay* valley is arranged by the location of the farms. Villagers who are related in the same lineage will arrange their weeding and harvest work in the same period, since their lands usually are adjacent to one another. Even if there is only one people in the family staying for farming work, the exchange labor arrangement will be based on the location and accommodate farms that are close to each other. In the morning of the day when labor is to be exchanged, the host family has already stayed in the valley to prepare food materials the previous night. All the members from each family who are planting daylilies join the exchange labor arrangement. Members of the exchange labor team will gather in front of the activity center after eating breakfast together to make sure of the number of participants.

After everyone has arrived, the group will be broken down into several units, each with their own transportation, and travel uphill. Unlike Han farmers who may have the choices from

local convenient breakfast booths on their way to the farms, Amis farmers don't buy this readily available breakfast from the shops on the main street. It is not on the way to the Dark Tribe and also the breakfast from convenience shops is "not salty enough" (*Ab'sah* in Amis) for them to energize their morning work. The ideal morning meal would be solid cooked rice and some local vegetables marinated in soy sauce; if there is pork left from last night to add that would be great. Even though the convenient breakfast booths provide sandwiches or burgers with egg and bacon, the western style flavor is not appealing to the Amis elders at all, neither do they have the luxury to buy breakfast. The only exceptions are the teenagers who graduate from junior high school and take a break to join the labor exchange to help their families. They will ask the villager who drives the wagon to stop by those booths so they can purchase the western style breakfast they like. I find this request and allowance particularly interesting, and it almost feels like an allowance to the youngsters for their devotion to labor exchange-work.

"Why don't you eat the breakfast at home instead buying it here?" I asked a youngster, while I was craving some flavor other than salty myself as well.

"Well, we are going into the mountain for a whole day, maybe even several days. At least I want to remind myself of the taste of 'breakfast outside'. The dishes and rice are just too boring for us. We will eat them, though, if we really have to." "You don't like the regular Amis taste?" "No, I don't. They are too 'mono-tonal' for me. If we could have a convenience store in the mountains that would be great! *But the stores will not go into the mountains; you have to come out to the stores.*"

Her response made me ponder. I chewed over her words while sitting in the open wagon on our way to the hilltop, then going down into the valley. It is a long journey between the village and the valley, going through about eighteen sharp turns on the way. They are immersed in the music playing through their earphones along the breezy journey down to the valley. As teenagers, it seems understandable that they would want to be aligned with the outside world and

enjoy fancier flavors. However, although just a few years of age apart, there is a difference between young adults who were disappointed and hurt by the way of living in the city and want to come back home to pick up their farming initiatives, and teenagers who eagerly embrace the world outside of the village. The statement from the teenage girl who wants to go out to the store shows that not only the young generation is drawn to the outside world, but the agricultural goods produced in the mountain area are also following the flow from local to the market outside. The exchange of labor among the villagers is different from the exchange that happens in the market, which draws both products and younger generations out of their hometowns.

When the exchange labor participants all arrived at the field of the day's host, they will first examine the range of weeding for the day. In general estimation, a team of twenty people can cover about 0.3-0.5 hectare in a half day. However, it also depends on the experience of the members and the degree of slope of the field. The group usually sets off from the village before 7 am, and it takes about 40 minutes to travel from the village to the valley. By the time they start to work, it is usually around 8 am. Sometimes if some of the work is not for the group, the members of the house would start even earlier since early morning is the most enjoyable time to work. The whole weeding group will have a break around 10 am and resume. After 11 am, the sunburn will be unbearable. The whole group will take a lunch break around then, and take a nap or rest until 1 pm in the afternoon, and then carry on the work until about 5pm (without a break in the middle this time). After the work of the day, the host will treat exchange labor helpers a decent meal of dinner (Figure 12). After dinner, the whole group will then go back to the village if the daylily field is closer to the village or if the participants have other things to do downhill in the village. If the field is really far away from the village, such as past the Jo-An

Creek (the middle line of the “Dark Tribe” area), the group then plans to stay over night in the valley for four to five days, sometimes a whole week, in order to finish the weeding in the area.



Figure 14. A decent dinner treated by the host family to exchange labor helpers is necessary after a whole day work.

During the weeding, the work is not just bending down to reach for wild grasses and pulling them out of the earth. Weeds are usually taller than the daylily, but their roots are shorter. Because of this feature, the most efficient way to weed among daylily plants is to reach the hand into the complex of plants, find the daylily just to make sure of the location, reverse the direction of the palm, and grasp the rest of the bunch of grasses to pull them out. It should be noted that

while grasping and pulling the grasses out, one should not force too much in the beginning. Since the weeds are rooted, the point is to pull them out with the root and lay them on the ground so that the root will be exposed under the sun and kill the weed. If the roots are left underground, they will grow back immediately. The force should be gradually increased to make sure the roots are coming out of the ground. When the dirt is looser after weeding for a while, weeding can be done by digging the noticeable weed plants out of the soil.

For a while, there is only the sound of wind and of weeding by the farmers. If it is in *Ciharaay* valley, the breeze in the woods makes the weeding pleasant; if the work is in the scattered slope fields near Liushidan Mountain, in Dafdaf or Cikailinan, the work will be a bit difficult since there are no tall trees to provide shade and the slope is steep. “*Ai~~ Mamaan sao kina damdaw? Ladiu-en kita mi-newanew caainai?*” (Ah, what happened to you people? You don’t want to sing while weeding?) Vayi Dibus stopped her weeding action for a short rest and asked, as if she is reminding herself. Then she started to sing in a soft but enchanting tone:

*Ho hai ya~
Ina aw ato ama aw, mi-newanew kami diniaan,
Caainai aga bihanhan do
Caainai ga malahok
Vali-en diniaan, ma-Umah anini a lumiad
Hay yo vinawlan no Talampo
Misimsim do no ladiu damuan-an
Haiya ho hai ya*

“Ho hay ya,
Mothers and fathers, we are weeding here on this land.
We do not get rest,
We do not eat lunch,

It is enjoyably windy today though.
We, the villagers of Talampo,
Miss the songs you used to sing
Haiya ho hai ya!”

The melody of her song is meandering as well as inviting. It is the style that is shared by the Talampo Amis, who sing during farm work or while drinking, when everyone can join in. The lyrics can be changed and freely added to, depending on their mood of gathering or to reply to a topic of conversation in the song. Singing helps people enjoy the process of working, forget the tiredness, and sometimes get a chance to ridicule a member who is a target of group jokes. In general, the song is sung in a rotational fashion. A leading member will start the melody with familiar lyrics about the hardship of weeding and farming in the field, or talking about how the day should be cherished for work, encouraging the fellow workers to enjoy the wind and the sun. The later half of the song is usually a fixed melody with similar syllables to mark the transition and ending of a part of the song (cf. Sun 2009). In general, any member in the farming group who wants to follow the song after the leading singer is fine. The most cases, however, the first to sing is usually the oldest members, either fagi Butal or fagi Panay in Talampo, who are also the elders of the church. The second would be elders of similar age, or their spouses. It doesn't matter whether one takes turns with the same or different gender, but since the elder females are far fewer than the males in the exchange labor group, it turns out that the male take several turns before a female joins in the singing. When the singing turns to young males in working units, they follow the regular lyrics, but in the last few sentences joke about their fellow male farmers, sometimes about their speed of weeding too slow, sometimes about their bad luck at hunting last

night. This is a way for members to pass the time faster. It is also a time to observe who is better at different activities, and who is usually ridiculed.



Figure 15. Singing and Weeding under the Shadow of State-owned Woods

“Stephen” Kacaw is a person who is constantly ridiculed by the working members. In his early 60s, Stephan is not a villager of Talampo, but actually an Amis from the neighboring village “Cilakesai.” In fact, he is the elder brother of Pastor Patal, who is originally from Cilakesai. Even though his home is in a village about 15 kilometers away, he stays in Talampo during the exchange labor of the harvest season. Stephen was given his nickname because he acts and talk competitively, like the character in American movies (maybe Steven Seagal but he

couldn't remember the title of the movie). Stephan is a diligent worker. He left home to work as a high seas fisherman after finished his compulsory military service. However, he was heavily beaten while working on the boat and, according the Pastor Patal, his employer dumped him into the ocean in order to intimidate him. Since then, he had become suspicious and irritable. He married a woman who is mildly mentally disabled, had three children, and worked in different places for short terms. As a result, it was suggested to him to come to Talampo and work for the weeding season. However, his temper is usually bad and his behavior become clumsy after heavy drinking; even the Talampo villagers sometimes ridicule him about his actions or his talking. In the case of singing while weeding, the ridicule of Stephan goes something like:

Ho Hay ya~

Ama aw Stephan, minewanew aw i dini

Ma-umah ato malitengai bahanhan

Miadopai a lavi how, madugadugai anini?

“Ho Hay ya~

Ai, grandpa Stephan, he is weeding here today,

Working a bit, and soon taking his rest,

Did you go hunting at night, so that you doze off during the day?”

When the working unit sang to the end of the lyrics, Stephan raised himself from weeding and cursed back by regular Amis, “Uh! Wacu!” (You dogs!), and sometimes joined back the working unit in the singing to ridicule himself. Rather than feeling angry and excluded by the community, Stephan sings with the working unit in responding to his fellow workers' attention to him, showing his attachment to the group rather than the times he spent out of the valley. During the weeding period, Stephan usually sleeps in the shelter in the valley. With two meals prepared

by the host, and NTD 800 dollars a day for the labor exchange “wage,” he can support himself for a while before he goes out to take other short term works. From time to time, Pastor Patal has to act as Stephan’s custodian in order to take care of several issues, such as paying his elder son’s high school registration fee, preparing his wife’s disability application, and one time, to bail him out of jail after he was detained for riding a motorcycle under the influence of alcohol. Talampo farmers get used to the minor trouble that Stephan attracts; however, they still ridicule him in the songs in order to remind him as well as themselves about the possible problems that can occur when unsupported indigenous youths experience exploitative working conditions.

Talampo males like to stay in the valley during the time of weeding. They can take advantage of this time for hunting opportunities. As a community that sustains itself in a mountain area, Talampo males develop more hunting skills than fishing skills when compared to coastal Amis. After a tiring day of weeding, young male farmers will consume their dinner fast, go for a short nap in the early evening (roughly about 6-9 pm; since there is no electricity, the night falls earlier) and wake up after that to prepare for their night adventure. A well-prepared package for hunting includes a headlight, matches, salt, carrying basket (woven by yellow rattan plants), and most importantly a shotgun and shells. The gun is usually kept in the valley cabin and locked to restrict access by outsiders as well as women. The critical part is to take enough gunpowder and a comfortable number of round bullets since they are not only tools for hunting but also for self-defense. The best shot and luck would bring them a wild boar or a Formosan Reeves muntjac deer, or sometimes a white-faced flying squirrel instead. If it is a rainy night, hunters will usually stay in the cabin, chat and drink. But some, unwilling to give up, will take a bag and headlight out just to find some creek frogs to justify and maintain their hunter mobility. Hunters return around 3am and rest until the early morning when other farmers are up to gather

again. If the hunting bears positive results, other villagers will usually be awakened by the excitement of the hunters, share information about the expedition, then go back to sleep.

With no electricity, the night in the valley is only lit by kerosene lamps. A-min, a single male farmer in his early fifties, likes to arrange his tools out of the cabin under the lamp. His father was Min-nan Han Chinese, and his mother Amis. After spending most of his youth outside of Talampo with his father, he identifies himself mostly with Min-nan Han rather than indigenous Amis. After his father died, he returned to Talampo and took care of his mother, who also passed away few years ago. During our conversations, he usually uses Min-nan and Mandarin, rather than the mix of Amis and Mandarin like everyone else. It is not just a result of acculturation in the Han environment, but rather a self-distinction from the rest of the Talampo people. In the working unit, he addresses his fellow Amis workers as “*Huan-na* 番仔”—the term for savage in the Min-nan language—in a joking fashion; and some talk back to him, questioning if he is not a *Huan-na* himself. He replies in Min-nan, “*Huan-na* calling each other *Huan-na*, what’s wrong with that?” As a repatriate in the community, he enjoys hunting and staying in the valley a lot. Under the kerosene lamp, I asked him about life in the valley compared to urban life. He paused his work and looked at me, replying in Min-nan again,

“You don’t like the life here?”

“Yes I do. But I am asking you,” I replied and pushed back.

“Ha, *Huan-na* naturally like the lifestyle of *Huan-na*, even I am only half of *Huan-na*...” he paused and continued after puffing out smoke, “The valley to me is like a quiet pond. I have wasted some of my life outside, but I can jump back here and wash away the dirt. When I was younger after I washed up myself, I rushed out again right away. But after I got used to the life here, it turned out that I like the mountains and going out in the night. I REALLY like being a *Huan-na*. *Huan-na* has very few, but they exchange what they have. The outside world is all about using your labor and extracting your essence but no place nourishes you in turn. *When it comes to the market, no one cares about exchange anymore!*”



Figure 16. (Left) Sawma fired for flying squirrel at night, (Right) and the preparation of ammunition for hunting.

Again, I ponder his statement among the continuous sound of forest frogs. What A-min means as “exchange” is not the market mechanism, which applies labor for monetary value as its rule of coercive domination, but rather is the mutual help and rotational efforts where each can sometimes be the host, sometimes employed workers. Like the situation of Stephan, A-min used to do work at construction sites earns minimal wages. However, he wasn't able to save much money because he used to gamble and drink with friends from time to time. The work on construction sites was dangerous and the workers weren't provided with insurance for any possible accidents. A-min once fell three stories at a construction site and, luckily, didn't receive major injuries. However, his leg is a bit twisted since then and he cannot work as often as he did. In Talampo, most of the males worked outside for a time after their military service. It is

relatively rare that youngsters came back in Talampo instead of staying outside of it. Among the 12 males that are staying in Talampo during the organic transition, seven of them stay in order to take care of family members who are old or ill, and five of them have either a larger farm in the valley to take care of or some paddy rice farms they can work on. In those cases, the crop planting on different areas, or different types of cultivation, also divide the practice into organic and non-organic for economic concerns. The differences of multisite farming will be discussed in a later section about the transition to organic practice.

A-min's testimony about market and exchange also tentatively criticizes some villagers who do not join the exchange networking with others in the community. Not every villager farming in the valley enjoys the lifestyle of exchange labor and feels comfortable with the implication about being a "huan-na" living in the mountain. Gawbih', who has about four hectares of land on the slopes in three different locations in *Ciharaay* valley, does not work with the labor exchange group. When I approached her and asked her about the reason for this, her reply was very rational,

Well, they talked about the benefit of being efficient. How efficient is that (of exchange labor)? I can hire some temporary workers during the necessary time for daylily picking instead of exchange with people who just wait for lunch and dinner after a day of doing nothing!

Her harshness and selfishness is infamous among the Talampo. Gawbih's father is the maternal brother of fagi Butal, who is a die-hard supporter of the organic transition. Gawbih's father, fagi Sawmah, was a postman and had better income than other families. At the time when most of the males went out for wage labor work in the 1970s, Gawbih's family (their family adopted the Han Chinese last name as Chen) stayed in Talampo and got a chance to register their land title before others knew. This was the beginning of the resentment directed toward the

Chen family. Since then, the Chens have accumulated more land, have aligned themselves with the Chike mountain (about 10 kilometers north to Liushidan Mountain) daylily farmers, and have made wholesale arrangement with the farmers there. Furthermore, it is said that the Chen took advantage of another villager, lending him money in season of crop failure, and taking over half of the land when he could not pay back the money later on. It was explained by Gawbih' and her mother, when I cautiously inquired, that the land was originally their property, and Gawbih's father used to participate "exchange in labor" with the other family. After fagi Sawmah died, they have requested the return of land several times but in vain; finally this resulted in their "taking back" the farm when the family could not repay the loan. The Chen family was considered "land grabbing" in the village thereafter.

The land dispute drove the Chen family away from most of the mutual exchange networking. Nevertheless, they still participate in Sunday service in the local church. Other than this, Gawbih' is confident about separating herself from the mutual help circle since she has enough quantity of daylily from her own land, and can negotiate with the wholesale buyers outside of the valley. Local moral discourse about Gawbih' also denounces her with rumors that now that she is divorced from her Han Hakka husband, she sleeps with the wholesalers thereby gets better deal from them. However, in their arguments against Gawbih, no one directly confronts her, since they are still connected by lineage root—doing so does not go over well in a small community. Gawbih' usually hires three workers from adjacent area—only Han Hakka, no Amis—and pays them 700-900 NTD a day depending on the amount of land they cover while weeding. During the daylily harvest season from August to November in 2009, the wage was paid by the weight of collected lily buds: NTD 20 per Tai-Jin (one Tai-Jin is roughly equivalent to 600 grams) collected. Thus a wage farmer can earn about 600-1000 NTD per day depending

on their speed. Such wage level is determined by the general consensus in the daylily growing area. As these two types of working (communal exchange-work and direct negotiation with the market) collapsed due to the drop in price over chemical treatment, Talampo faced its great transformation.

4.4 LINEAGE, CHURCH, AND FARMER'S ASSOCIATION: INNER DYNAMICS AND DIFFERENTIATION THROUGH ORGANIC TRANSITION

The transition started from a struggle for survival in Talampo. Since mechanized agriculture and mass production became the conventional trend, during planting and post-harvest daylily are treated with large amounts of chemicals. For the convenience of weeding, farmers use herbicides on short-root herbaceous plants, and keep the long-root plants alive (daylily is one of them). In order to stimulate the production of flower buds, high doses of nitrogen fertilizer are applied. Most problematically, after harvest, the daylily buds are soaked in a solution of sulfur dioxide in order to preserve them as well as to add shining yellowish color. In 1998, as a response to the general public, the Consumer Protection Agency in Taiwan did a survey of daylily chemicals in the packages for sale, which devastated the market for local production⁴⁵: dry daylily products were reported to contain over standard and carcinogenic artificial chemicals. As the news spread of the use of artificial preservatives, it resulted in consumer panic. Suddenly, the price of daylilies dropped dramatically: the price of post-treated daylilies dropped from 300 NTD to 90 NTD per kilogram. Talampo village, which as a community depends on daylily

45 Reference: 1998 Annual Report on product safety, Council of Agriculture.
<http://www.coa.gov.tw/view.php?catid=6187#9>

plantation, was severely hurt by the change in the market from 1998 to 2002. At the time, many villagers went out to take other jobs in order to compensate for the shortage of their agricultural product earning. Since some of the farms are temporarily abandoned, a vicious cycle began, in which farmers needed to apply more herbicides when they tried to restart cultivation.

In 2000, Pastor Patal was assigned to the Talampo Presbyterian Church after serving in another Amis church for several years. Although an Amis herself, she is not a Talampo local, but is from the neighboring community *Cilakesai*; she actually has had several classmates from Talampo since elementary school. She was surprised to find that the farming business was declining so dramatically when she assumed the pastor's office. The people of Talampo used to plant rice, ginger, or stem tubers such as yam or taro on the nearby slopes of Talampo village, and saved the valley area for daylily plantation, since the weather is better for daylily flowers to grow there. At the time of the daylily price drop, Talampo farmers suffered because their "best" land was devoted to this cash crop, and it is difficult to change the to rice or corn cultivation in a short time. Compared to the massive area of valley farms, they use only scattered lands near the village to devote to subsistence. On one hand, Talampo farmers were choked by a market mechanism. On the other hand, it is difficult to change back to entirely self-sustained production. As the price of daylily steeply dropped, Pastor Patal led the villagers to pray in church, discussed the possible cultivation of alternative crops, and tried to negotiate with the local Han Chinese-led farming association for the slow-selling and stagnated daylily stock. But the local association was not able even to promote their own sale, let alone that of other farmers.

As Pastor Patal recounted, the disaster of the market brought new hope for them. In 2001, she participated in a typhoon relief and revitalization service in another Amis village, where she met "Dr. Wu," who works in the Development Center of Biotechnology (DCB) with the

cooperation of World Vision Taiwan. Dr. Wu was looking for organic farming communities to collaborate within indigenous communities. She organized a platform for indigenous organic agricultural products and was looking for communities that could potentially provide different products so that they could arrange delivery for customers. To address consumers' needs, the organic market needs diversity.

In the market, organic products other than rice and green vegetables were mostly imported from certified producers in China or Southeast Asia. For the largest organic chain store in Taiwan, Cotton Field Organic Channle (棉花田有機通路), dehydrated groceries and Chinese medicine ingredients are mostly imported from China, with organic certification done in samples by the Taiwanese organic certificate agent Tzu-Hsin Inc. or by foreign agents (Hsieh 謝光本 2007). The problem with those products is actually similar to that of conventional products: since no one can easily access information concerning production processes, it is hard to be sure if the agricultural products are really organic by simply looking at the certified labels. Also, importing organic products from abroad has a negative impact on sustainability. Dr. Wu and her “Yuan-Hsian (Hometown) Organic Online Market Platform” (原鄉有機網路平台) just started to combine the efforts of indigenous communities in order to build a supply chain. Talampo is fortunate to be one part of the diversity because it grows daylilies, a conventionally artificial-input-dependent product. Chinese consumers use daylily as the tonic vegetable in soup and stew. As used in Chinese medicine and in regular cuisine, dried daylily buds are good for driving out “poisonous elements” from the body with their diuretic effect.



Figure 17. Dr. Wu (the woman wearing shirt sitting in the middle) held discussion of organic transition at a working hut of Ciharaay with Talampo farmers. Note the illustration of Jesus put in the middle marking their religious belief.

Dr. Wu had devoted herself to the promotion of organic farming after she was diagnosed with breast cancer in 1996. She holds a master's degree in agronomy, specializing in bio-formula pesticides, and works as a researcher in Development Center of Biotechnology. Dr. Wu believes that the indigenous communities are ideal places to advocate organic farming since those areas have more suitable environments and people with less income who will benefit by the higher revenue afforded by organic products. As both of them are Christians and concerned about indigenous communities, Pastor Patal and Dr. Wu decided to include Talampo as one of their six indigenous communities under the Yuan-Hsian organic platform. Pastor Patal says she

had a dream the night right after meeting Dr. Wu, which is about a shining and huge cross floating in the valley of the “Dark Tribe” and the blossoming daylilies and tourists are all over the places, just like “Little Switzerland.” Dr. Wu came to visit the *Ciharaay* area, and was in love with the environment right away. As a potential organic farming area, it has the natural advantage of self-enclosure and separation from other conventional farming areas; therefore, the problem of cross-contamination by neighboring conventional farming areas can be avoided. Dr. Wu decided to try to change *Ciharaay* into an organic farming area.

However, there are at least three issues to be dealt with before organic practice is undertaken. First, organic practice certification is basically a process of “standardization,” which has to be translated into the Amis language in order to communicate this to elderly farmers. Second, the materials and recipes needed for organic practice, mostly bio-formulas that are substituted for pesticide and nitrogen fertilizers, have to be taught to the farmers so they can learn to make them by themselves. Last, but most problematic to the Talampo farming group, there is paperwork to be done, including the proof of land tenure, which the local certifying agencies require. In order to fulfill these tasks, the Talampo community organized their own “Talampo Agricultural and Cultural Development Association” (達蘭埠文化農業產業發展協會), and selected working unit for public construction of the warehouse, storage rooms, and lavatory in *Ciharaay* area. Dr. Wu helps the community learn how to produce bio-formulas and fertilizers. She also found major sponsorship from World Vision Taiwan (台灣世界展望會) and the “Association of Taiwan Indigenous People Development” (原住民族發展促進協會) for the empowering sources and money needed for the transitional process to organic farming. The working unit is composed of 12 male farmers in the association, resembling a traditional age

grade organization of Amis (see Huang 1999, Tsai 2008). Pastor Patal even asked her husband, Honi, who is not a native of Talampo, to join the working unit in order to help the villagers.

Dr. Wu simultaneously supports six indigenous communities in order to form an organic production net.⁴⁶ Among them, Talampo is considered the most successful one based on its management via the working unit (Zheng 2008). Other than the dedication of the working unit, Talampo also introduces a traditional practice of group cooperation, “*malapalew*,” which means exchange labor and reciprocal helps during the working season as previously mentioned. Since in organic practice chemical herbicides are not allowed, fast-growing weeds have to be pulled out by human labor. This is much more tiring compared to the fast and easy chemicals that are simply sprayed on the weeds. Han farmers from the local Farmer’s Association of Fuli Borough ridiculed the Talampo people as “nuts” when they talk about undertaking the organic transition.

The land in Dark Tribe is covered by over 20 hectares of daylily fields, some of which is on steep slopes! I don’t see how they can manage it. Even I can only try on this relatively flat area, let alone produce the so-called ‘bio-formula’ they have to make by themselves.

The only organically certified Han farmer, Mr. Huang of Little Switzerland indicated his doubt to me. Mr. Huang’s organic garden is right in the middle of other daylily tourist garden on Little Switzerland. He uses dried daylilies to make tea for the guests directly from his gardens by his B&B cabin. He has a special technique for drying daylily buds without applying sulfur solution, and was asked to help the Talampo people with this technique. He was a tea farmer before settling in the Liushidan Mountain area and later applied the technique of baking tea leaves to daylily buds in order to avoid using a sulfur dioxide solution for post-harvest treatment.

⁴⁶ Other than Talampo (as Amis tribe), there are Gasanow in Taoyuang (as Atayal tribe), Megalang and Kuli in Hsin-chu (as another Atayal tribe), and Hsin-mei and Laiji in Chiayi (as Tso tribe). See Zheng (鄭貴芳) 2008.

As a fellow Han Chinese, Mr. Huang spoke to me in a proud tone, saying that it is fine to teach what the indigenous farmers need to learn,

But they are all lazy and dependent on the government or charity funding, you know? I am not sure how much they can sustain if they don't really have a scale of production and a sense of design to attract long-term customers. I am not bragging, but my garden here and the B&B are specifically chosen and designed. It is on the relative top of this hill (one of several hilltops on Liushidan Mountain) so that when other farmers are spraying herbicide, I would not be affected.

Nevertheless, Pastor Patal told me that everyone in the area knows that Mr. Huang uses herbicide before the blossom season so that he can manage to take care of the B&B, teahouse, and daylily fields at the same time. "Maybe he has some ways to wash away the herbicide, otherwise, how did he manage to get the organic certification?"

The formation of the Talampo Association is a new milestone for the local transition. However, it also causes new tension in the community itself. As mentioned, there are four family lineage origins (in the Amis language, "*gnasaw*") of Talampo. They are *Bacidal*, *Ciwidian*, *Cikatopai*, *Cacalawan*. *Gnasaw* is the name for how a family lineage to recognize their ancestral origin from the creation myth (Huang 2002, Lo 2007), and it can be recognized as the title of a marriageable group and kinship among the general Amis population. For Talampo villagers, the *Bacidal* and *Ciwidian* families are from the north, *Cikatopai* from the south, and *Cacalawan* from the coastal side (the other side of the Coastal Mountains). The most populous family, which is now adapting the Han Chinese last name Wang, was from *Bacidal*. They were originally from the neighboring area of *Tafalong*, a traditional and large Amis community in central Hualien. The rich families are Chen (the family of Gawbih') from *Cikatopai* and Lee (including the church elder fagi Panay who has been against the organic transition for several years) from *Ciwidian*. The Chou family, including fagi Butal, his sons A'dop, Vunga, and

daughter Alik', is from *Cacalawan* on the coast. "*Gnasaw*" means vine, and the Amis relate amongst themselves with *gnasaw* as leaves from the same vine. Several vines interweave into a tribe, *Niaroh*. In Talampo, every family has its farm near the residential village as well as valley farms in the *Ciharaay* valley.

Before the Japanese colonial period, the Talampo Amis were living and farming in the *Ciharaay* valley. The valley is good for growing millet (*Havay*) and sticky rice (*Banay*), and Amis farmers would carry the products out of the valley by walking along the creek for 4 kilometers. They either sold the product to the local market in town center in the plain area, or to the Hakka rice factory. Other than millet, the Amis also grew starchy tube plants, peanuts, and ginger. Japanese colonial officials on the one hand changed the cultivation habit into paddy rice farming. They also relocated the Amis from the mountain creek area to the plain riverside in order to join them with the cultivation of a new farming area near the bank of Siuguluan River (秀姑巒溪). During 1930s, the Talampo Amis started to resettle on the other side of Liushidan Moundain, forming the village they are living nowadays. After the colonial time, the Amis went through administrative transition under nationalist government policy. Talampo was then and up to the present assigned as part of Xinxin village of Fuli Borough. The major Xinxin population is Hakka Chinese, living along the street near the high road in the town center; therefore the elected village heads are all Hakka. However, Talampo has its own "chief," equivalent to a village head. Four major family lineages have been selected from as chief leader throughout the relatively short history. The first one was Gawbih's grandfather, fagi Kacaw, of *Cikatopai*. After him was fagi Panay of *Ciuidian*; the third was fagi Butal of *Cacalawan*; and the fourth is fagi Angaw from *Bacidal*, who is the current chief. Family lineages have no specific political divisions since the village is relatively small. Amis people mostly relate to their *gnasaw* at the

time of family celebration occasions, especially in Mother's Day, New Year's Day, and the Harvest Festival. The Amis was traditionally a matrilineal and matrilineal society, which resonates with the recognition of mother's day as family connection. During the Japanese period, the Amis was forced to change into patrilineal naming system (Huang 2004, Shimizu 2000). The political leader of an Amis tribe is always male; in contrast, the family head of *gnasaw* is centered on a female, usually the grandmother on the mother's side. As a corresponding dyad, the gender division in Amis groups represents different power holders in Amis society: female in the domestic sphere and male in the public one.

In Talampo, since the organic transition took place in 2002, the decision-making mechanism involves with three different entities: the family lineage, the cultural and agricultural association, and the church. In order to persuade the church elders, Pastor Patal was deeply involved in the organic transition. She not only introduced the "professionals," the team with Dr. Wu, from outside on help on the situation, but also provides a space from her parents-in-law as the storage site to make manure compost. The association is organized by farmers who want to do organic farming; it is led by the "deputy" chief of the village, Sawmah Asaai. The association collectively decides what works to be done and entrusts the work to the working unit. Family lineages are organized for the assignment of *malapalew*, labor exchange. As a whole, these three aspects overlap among most of the personnel. For example, the meeting of the Agricultural Association was usually held right after the Sunday service, officiated by Pastor Patal, since most of the church elders are also members in the association. Their sons or younger brothers are the members in the working unit who carry out the work after the meeting.

However, the change of farming habits and requirements caused the inconvenience, dissidence, and strained dynamics within the small community. The disagreement over applying

for organic certification resulted in two factions in the Talampo community. One group considered the conventional way of farming and negotiating with local Han farmers and service wholesalers an easier way; local farmers had already developed relationships with regular merchants. The other, and the majority group, wanted to try the transition to organic farming and hoped to break the vicious cycle of fluctuating prices. It was rather difficult to try to change the pattern of farming habits of the old Amis farmers after twenty or so years, even though the pattern is learned from Han farmers. As the transition was ongoing, two incidents challenged the original political mechanism of Talampo villagers. One was the shift of decision maker from church elders to Pastor Patal and the working unit, and the other was the debate over how to manage the organic transition. Organic practice breaks the routine of conventional, individualized agriculture, which depends on machinery, chemicals, pesticides and herbicides.

Traditionally, Amis society was based on gerontocracy and hierarchical decision-making mechanisms, which considered elders a source of authority and followed the tradition of consulting the higher ranked and aged (Huang 1996, 2005). In other studies on contemporary Amis, there are examples during the transition when Amis youth are trying to fight against the threat to their environment (Tsai 2010), or for the need for public group performance (Sun 2007). In the case of Talampo farmers, the organization of the farming association challenges the gerontocratic authority and highlights instead goal-oriented group decision. The shift of decision-making mechanism and the unconventional transition annoyed one of the elders, fagi Panay, the former chief of the tribe. In 2007, the Talampo working unit was trying to arrange a “standardized” procedure to work in *Ciharaay* valley: after two years of asking elder farmers not to apply herbicides and voluntarily work to weed the farm, the working unit took another step. They requested that the farmers apply organic manure fertilizers on an arranged schedule so that

they could anticipate the growing speed of weeds and also the timing of daylily buds. Furthermore, they also requested the farming households not to sell the “pre-certified” daylily harvest to the neighboring Han buyers, so that they could accumulate enough quantity to meet the demand of Dr. Wu’s selling platform.

About two weeks before the second checkup for the upcoming organic certification examination in October, the working unit came to fagi Panay’s farm and asked him not to spray herbicide because of the organic certification procedure. After following the rule for a while the previous month, the elder Panay had thought that the daylilies were not growing well simply because herbicide was not sprayed; he assumed that all the nutrition was absorbed by weeds. The working team intended to take over the work of the elder Panay; he was really irritated and denounced them, “Annoying Working Unit (工班無聊)! You guys are like gangsters!” accusing them of being disrespectful to him. The working team just quietly did their work and asked the elder to stay away from his farm for few days and to check back later. When the incident was later recounted by the villagers, other villagers complained that the elder Panay was not cooperative, and transformed the comment “Annoying Working Unit” into a humorous, “Who says they are annoying? The working unit is annoyingly great (工班無聊? 厲害他們)!” From then on, the working unit of Talampo identified themselves representing the persistence of the organic transition. They continued to pursue their goal; though annoying, they insisted on the right idea. When tourists were gradually attracted to Talampo for its indigenous features as well as organic efforts, Pastor Patal liked to ridicule her favorite working unit in front of first time visitors,

“Some villagers said that our working unit is like *liu-mang* (gangsters in Chinese). Well, other than the fact that they are fierce and uneducated, they are truly boring people who want to stay and help instead of leaving their hometown!”

The pun in Chinese is because gangsters, *liu-mang* (流氓) is pronounced the same with the term “staying for help”, *liu-mang* (留忙). Pastor Patal uses the joke so that every Amis will recognize their efforts and also to encourage them not to be intimidated by the disagreement of the villagers.



Figure 18. Working Unit of Talampo lifting a wind-thrown wood for local guidepost

As for the farming community itself, not only is the idea of organic practice not generally agreed upon, but the actual calculation makes some villagers resist and reluctant to change their practice from the conventional way. It is centered on the agreement of “*malapalew*”—the exchange of labor. As a matter of fairness, the working unit helps each farmer for one day in the period of weeding. Therefore, if one household has more than one farmer, they will have more

days to deal with weeding their land. There is usually 20-24 people in weeding; 8 of them are from the working unit (the working unit has in total 12 people, with 2 rotating in the office and 2 coming and going) and the rest are associated farmers. The whole group can only weed a half hectare each day. However, some farming households have only one registered farmer but hold a large amount of land (the largest household has three hectare of daylily land). They have land and income from areas other than Talampo, specifically a paddy rice farm on the other side of *Siuguluan* River (the family was successful in accumulating capital from previous work),⁴⁷ and consider cooperation with working unit a waste of time. *Gawbih'*, the female villager who arranges her own harvest and selling to Han Chinese merchants, is the one who doesn't think the working unit is any good for her farming "business." There are also two households keeping their membership in association but not doing "*malapalew*" (exchange labors). They consider hiring temporary workers themselves more economical and efficient, but they would like to join the organic transition with the community as a whole.

Working issues aside, another dispute occurs over the revenue from the "Specialty Shop" on the Liushidan Mountain hilltop. The attendants are assigned by the Association as those who are better at cooking and communicating with customers. Although the revenue goes back to the account of the Association and is shared later as collective income, the attendants in the Specialty Shop can get some payment as their working wage. Some female farmers complain that they think the cooking and serving role should be rotated so that they can learn and share the revenue as well. During the transition years from 2005 to 2008, the difficulties and reality were negotiated among Talampo farmers in order to equally share the work and benefit as a whole.

⁴⁷ There were cases that some residents learned about that at the time of land title registration, some took advantage when others didn't know how to "do business with officials." Some even get the title of land when the original owners were away from the hometown and worked outside. In general, small farm owners in Talampo generally have a bad impression of these two households who are "good at taking other's land."

Since paperwork is needed, it requires someone who is literate and can arrange paper files, and the attendants in the Specialty Shop should know how to deal well with customers. In the past, the Amis farmers of Talampo learned the practical skills to deal with the market only if the family lineage, *gnasaw*, was rich enough and involved with Han merchants early enough, not to mention to encounter “customers” directly in the conventional farming situation. With the transitional requirements of organic farming, the division of labor is negotiated via three types of social institutions, *gnasaw*, the church, and the association. Learning how to do organic farming further differentiates farmers via its processes.

The studies of the modernization of farming in Taiwan have touched upon cases of capital accumulation and socialized differentiation (cf. Chen 1986, Ka & Wong 1991, Shieh 2007, Tung 2001, discussion extended from Chayanov 1986, Netting 1993). These are case studies based on conventional materials such as access to technology, change in family arrangements, or division of labor by gender and age as ethical or practical arrangements. In the case of Talampo, after the efforts of group organic transition, there are families that do both organic farming and conventional farming in order to split the risk of different types of cultivation. The transitional situation in Talampo is differentiated by the case that younger members who work organically in the valley more easily accept new innovation and are willing to try the new ways. The elder members who work on the hill close to Talampo village still apply herbicides and chemicals in order to supply the wholesaler looking for pre-dried materials. This is a strategy in which to share risk as the organic transition and conventional practice meet mid way and villagers were learning and testing the response of the market at the same time. Nevertheless, it is not just the organic practice that has transformed farming in Talampo. Talampo farmers have invested in and embodied the notion of affective labor, as well as the

identification of transitional justice with organic practice. In the following section I will discuss how affective labor and the landscape of emotion are perceived and performed in Talampo.

4.5 OF AFFECTIVE LABOR AND TRANSITIONAL JUSTICE IN ORGANIC PRACTICE

Picking daylily flowers is labor-intensive work and the buds have to be picked before they are fully bloomed. The buds will turn from green into golden yellow in the early morning, gradually blossom in the late morning, and finally, fully blossom after a whole day. The most valuable daylily buds are those of the first day shoots. The ones that are grown on the second or third day after the first round of buds are less valuable, and have to be sold in gross weight for frozen market use. The “first day bud” (一日花) will be quickly loaded into linen bags after picked, and sent to the oven the same night. After being baked in the oven for about 18 hours in low heat, the dried product will be put in storage bags and later sent out of valley for long-term storage in the air-conditioned warehouse in the village activity center. This is how it is done now. The conventional way is totally different, although picking the daylilies still requires human labor. However, there is no distinction between first day buds and the rest. After the buds are collected, they are soaked in a basket of sulfur dioxide solution. The soaking process takes about 8 hours, and the buds are all taken out to be sun dried for another 8 hours. In the end, sulfur fumes are applied in an oven for the effect of shining color and for preservation.

Daylily is not a local crop of the Liushidan Mountain area. In the past, the mountain was naturally covered with camphor woods, while the Amis hunted small games and plant under-shade crops for themselves. Colonial development changed the landscape and exhausted the

timber by the 1930s. The hilltop was soon covered by bamboo when new residents resettled and brought over bamboo for housing materials and for bamboo shoots for the market. It was only in the 1970s, that tea and daylilies were brought over from Taitung and began to thrive in the area. The economic scale and the quality of tea are not as good as the other place of production, such as He-Gang in Hualien. Daylily became the major cash crop on Liushidan Mountain, along with the Chike Mountain area of Hualien and the Taimali of Taitung.

Like Mr. Huang, the Han certified organic farmer who does not believe in the possibility of the Talampo organic transition, many local farming officials ridicule the Talampo people when they learn of their intention to do organic farming. In their understanding, daylilies are a type of tonic material in Chinese diet and medicine, so how could the aborigines know how to take care of them (from a fieldwork interview)? Furthermore, although the idea of organic agriculture resonates back to traditional practice before chemical farming, the idea has been differently imagined. On one hand, it is considered a realm relying on new skills and techniques, and it is believed that “poor” farmers cannot possibly attain this knowledge and resources. On the other, it is imagined as a practice in need of “pure land and pure mind,”⁴⁸ in which the transition from conventional to organic requires great effort, and the coexistence of organic and conventional methods is greatly frowned upon. Limited by the imagination, the organic transition of Talampo is usually under siege by skeptical discourses and intentional impediments.

Organic farming not only requires conceptual and behavioral changes but also a manipulation of symbolic capital (Bourdieu 1987). Therefore, the identification of skills and the transition of mentality are major “changes” that can be observed during the transitional processes. Like other institutions, organic farming in Taiwan ultimately depends on the certification

⁴⁸ The sentence is quoted from the brochure by “Tzu-Xin Organic Agricultural Development Foundation”, the major organic certifying agency in Taiwan. 2008 Print.

procedures in order to standardize the means and conduct of farming. However, for reasons including lack of monetary support, not trusting the certification agencies, or the spirit of “doing well by one’s own needs with no examination by others,” there are farmers practicing substantial organic farming who didn’t go through the certification process (Yeh 2007, Yu 2008). The organic practice has its reflexive transformation in the farmers. The transformation covers several aspects such as the feasibility of avoiding conventional herbicides and pesticides, re-engaging and re-recognition of the environment with new agricultural materials (Compell & Leipins 2001, Vos 2000), rethinking bodily experiences (Guthman 2003, Yeh 2007), as well as the social justice perspective on trade and market mechanisms (Egri 1994, Shrek et al 2005). While indigenous people are mostly suppressed by mainstream policies and exploited by the rules of the market mechanism, the transition of organic farming is not only a transition back to traditional knowledge, but also a movement for transitional justice regarding the recognition of ethnic and social class minorities (cf. Iris Young 1990).

In the case of Talampo, specialists who that are not local, such as the Development Center of Biotechnology or Dr. Wu, are willing to provide help, while the local officials and farmers constantly express opinions against the potential of the organic transition. As the extension of intertwined local competition, leaders of local conventional farmers, who are holding the power over the minimal but necessary budget of subsidies to farmers, may consider organic farming a threat to them. From time to time, Pastor Patal needs to negotiate with local Han leaders, but is constantly ridiculed by those in the Han farmer’s Association. “One day,” she recounts, “I was out to buy materials for our working units to build a storage room in *Ciharaay*, and the owner of the construction materials shop, the wife of the general secretary of *our* Farmers’ Association of Fuli, looked at me and said, ‘I heard you are trying organic

farming?’ I said, ‘Yes.’ ‘How about some chickens as a gift to you, since you may not know how to do organic practice?’” It is a joke but also a way to ridicule the Talampo indigenous farmers. In Chinese, “being organic” (有機) and “having chicken” (有雞) are both pronounced *gi* (機／雞). In this case, the terms are used for mocking Talampo’s trial of organic practice.

In 2008, after five years of transition, changing the quality of land in *Ciharaay*, adjusting farming patterns, and learning the self-production of bio-formulas instead of chemical pesticides, Dr. Wu finally had the opportunity for Talampo to go through the challenge of organic certification. Due to that fact that domestic organic examination requires a title of land tenure, Talampo decided to take on the international certification process. It was the time when Fuli and Hualien’s Farmer Association had invited the Swiss organic certification agency, Institute of Market Ecology (IMO), to certify their long locally renowned organic rice production. Dr. Wu raised some funds (for the application and examination fee) and requested the IMO agent (who is based in Nanjin, China) to stay one more day in Talampo for the certification of the organic daylily plantation in *Ciharaay*. The rice production site supported by the local Farmers Association didn’t pass the organic examination because of a mix-up of the drainage and irrigation systems. Surprisingly (to the local Han people), *Ciharaay*’s segregated natural environment and well-maintained farming schedule impressed the IMO inspector, who granted Talampo a two-year certification of organic status!

Being ethnically different and economically marginal, the Talampo Amis has to bear with the officials from the Forest Bureau who intrusively examines their land from time to time. They are asked to perform in the local festival which the local farmers’ association hosts, in order to attract tourists. These occasions constantly remind them about their differences, and therefore they invest more affective quality in their labor for organic farming. The affective aspect of

labor transforms the difficulties Talampo people face into corporeal experiences invested in organic practice (which requires more labor and time) and deflects the unfriendly local interaction. The affective experiences are shared with Dr. Wu, who herself is a breast cancer patient and searches for recognition for promoting organic practice among her high-tech colleagues in the Development Center of Biotechnology. I have witnessed several times, at the end of the organic evaluation meeting every month, Talampo people and Dr. Wu hugging each other, with tears and encouragement given to each other. The affective labor is not labor in affective form as discussed mostly in essays on the issue, but rather the labor is transformed into affective consumption and reproduction as “the constitution of communities and collective subjectivities.” (Hardt 1999:89)



Fig 19. The Celebrating Press Conference of Talampo Certification by IMO

As Michael Hardt argues on the affective turn of social constitution, affects can be considered a major quality for connecting corporeal experiences and cognitive evaluation “...

Because affects refer equally to the body and the mind, and they involve both reason and passions. Affects require us, as the term suggests, to enter the realm of causality, but they offer a complex view of causality because the affects belong simultaneously to both sides of the causal relationship” (Hardt 2007: ix). While organic certification becomes a branding and consumption of ideas more than the recognition of the politics of nature (Vos 2000), it promotes standardization of what can be provided and immaterial labor in the “passage of information between the factory and the market” as a “Toyotist” type of production rather than a Fordist type (Hardt 1999:93). Nonetheless, affective labor is also recognized in the situation of gendered services and work, that taken over by migrant laborers as a result of globalized capitalism which trivializes the non-factory production into labor of affective services. Affective labor is therefore not only a product of the immaterial aspect of capitalism, but also a reflection of the subjectivity of the migrant/working condition.

The investment of affects in labor turns unfavorable and depreciative work into meaningful subject making. After the achievement of organic certification by IMO, there are always occasions when Talampo’s working unit expresses their sentimental tones toward the transition or shed tears on the occasion of product promotion. Affective labor of organic farming is not a feminized mode of production, which reflects the trend of “women’s work” as lower wage work, performing much of the labor that is considered lower in social class as well (Janice 1998). Rather, it is a corporeal revelation of the relationship between body and work; a demonstration of symbolic capital in the form of embodied experiences. The political economy of the naming of “Dark Tribe” is then inscribed within Talampo’s recognition of affective labor against the difficulties they have encountered. It is also sold as value added which has been nicely packaged on the slogan of *Ciharaay*’s daylily product:

“It turns fragrant buds turn into useless flower within no day, if we don’t work diligently —The production of ‘Dark Tribe Daylily.’”

(一日不辛勞，不日即成花—黑暗部落金針花)

Taken as the slogan on the occasion of promotion of the organic product from Talampo, the saying is in some way a commoditization of the affection and labor investment that Talampo people identify with. Although the quality and the labor of picking the buds may not be dramatically determined by the practice of picking within a day, the slogan is actually a tool for the Talampo Amis to explain how their work is different from the other conventional farmers.

4.6 ENVIRONMENTALITY AND LANDSCAPE OF DIFFERENTIATION

Though this seems to be a good outcome of Talampo’s organic transition, the regulation of organic certification leads them into another type of “institutional governance,” that is, the paperwork for keeping the records. The difficulties of indigenous organic farming are various, but the most problematic one is the fluctuation of government policy. On Liushidan Mountain, Han farmers have acquired their legal status to run B&Bs or teahouses on the basis of “recognition by convention.” Local association leaders, as mentioned, also deliberately neglect the promotion of indigenous goods from Talampo and focus on local agricultural products by Han farmers. Talampo farmers have helped to preserve the valley as national woods territory and its natural look in *Ciharaay* valley, but they don’t have title to the land therefore are not

allowed to change the function of their shelters.⁴⁹ The work in *Ciharaay* during the organic transition requires the reconstruction of previous shelters in the valley, which is strictly monitored by the Forest Bureau. The drying cabinet for daylily in the valley cannot go through reconstruction as planned (because facilities used by conventional farming should not be used for organic farming) just because of the warning from the Forest Bureau. They have to secretly change the interior of the drying cabinets and change the machine without being noticed by the authorities.

This is just one example that shows the encountering of mild tension and unfriendliness between the Han and Talampo Amis farmers. Within the rubric of political action, the organic transition is thus an action of “differentiating others” from the self. The effect of differentiation facilitates the identification with Talampo’s self-realization via organic farming practice. Previous discussions on the relation between body and organic farming are mostly on the bodily perception (Lin 2008), the corporeal experiences on chemical usage (Yeh 2007, Yu 2008), or class identification (Goodman 1999a, Guthman 2003). Nevertheless, as previously analyzed via the relationship between organic farming/branding with affective labor, the practice of organic transition is reflected as the claim of justice, as well as a form of self-identification and differentiation from unfriendly neighbors and inconsiderate authorities.

Organic farming in Talampo is a political act of differentiating self from others. It embodies the difference between “Little Switzerland” and the “Dark Tribe,” as well as the resistance against the unreasonable restrictions authorities imposed upon their land. In the

⁴⁹ In the Chike Mountain area, another daylily plantation site north of Liushidan Mountain, the daylily farmers there are facing the same issue. However, those Han farmers have already asked the county government to change the law for their development of tourism in 2005. They argue based on the 8th article of the Forest Law, which allows the use of gentle slope for recreational housing construction based on the purpose of “special tourism.” Hualien County government has granted their request, but there has been no equivalent extension to the case in Talampo.

process of transition, the empowering team and Talampo people together not only exchange the knowledge and bio-materials needed, and the training on file management, but also invest their affective companions during the farming process. The process transforms economic incentive into affective labor, and invests the affect back to the later branding of the organic daylily products. However, new authorities come up after the old ones, continuing the regulation of organic farming. After the certification examination is finished, many celebrations in Talampo still go with the format of “preparing for the certification.” Public rules in organic farms have been put into words, and there are unlimited charts and sheets to be filled.

With the establishment of new regulations in organic farming, a new form of governance emerged, in which local farmers are required to file various documents. As Paige West states in her book *Conservation is Our Government Now* (2006), the idea of conservation becomes the new ruling ideology, and changed the interpretation of the landscape of the Gimi people in Papua New Guinea. The organic practice of Talampo is following a similar trajectory into a form of what Arun Agrawal coined as “environmentality” It attends carefully to

“... the formation of new expert knowledge, the nature of power, which is the root of efforts to regulate social practice, the type of institutionship with social and ecological partices and can be seen as the historical expressions of contingent political relationships, and the behaviors that regulations seek to change, which go hand in hand with the processes of self-formation and struggles between expert- or authority-based regulation and situated practices.” (Agrawal 2005: 229).

These four aspects have interwoven the knowledge system about understanding the environment as well as the dynamic background of how they are applied. The landscape of *Ciharaay* is inevitably transformed and reincorporated, from a natural habitat and hunting ground of the Talampo people, to a contested field of imagination over the accessibility of electricity (the “Dark Tribe”), and now to a newly developed site of successful organic farming and adventure

tourism. The darkness of the valley is not a “natural” thing; rather, it is a mixture of feeble political care and the imagination of candle light tourism. Organic certification reinforced identification with the environmentality, which amalgamates bodily experiences and expectation of governance via self-identification. From the viewpoint of governance and subject making (Foucault 1991, Agrawal 2005), environmentality is a mutual process of subjective operation and subjected perception. It also differentiates the notion of politics and social ruling from the initiatives based on environmentality. Among the practices of environmentality, there are also cases of transferring government rule to governance by private parties, which may be called “empowerment” (Dibden and Cocklin 2005:136). The intimate politics between the Talampo people and the authorities asking them to keep an eye on the forest loggers and poachers has demonstrated a model of soft surveillance. Even the upstream hiking activity planned by World Vision Taiwan (as an empowering effort) is also a soft model of development. All together, the intimate politics among these practices combines one with another and constitutes an “imagined belonging” (Agrawal 2005:168) which is more complicated than ethnic identity formation (cf. Anderson’s “imagined communities” 1991).

4.7 DIALECTICS OF EMOTIONAL LANDSCAPE AND AFFECTIVE LABOR

What I have demonstrated in this chapter may be considered as the constellation in the newly developed emotional geography, about local politics, farming transition, governance of empowering agents, and the landscape of differentiation of self and other. In the anthology *Emotion, Place, and Culture*, the authors consider that the rise of “emotional geographies” will not make something fragmented a whole, or restore its integrity. Rather, the emotional

geography makes “this lack available for reflection, problematic, and on this basis facilitates a form of self-critique—a negative dialectics” (Smith et al, 2009: 5). Showing Talampo people’s organic farming practice as affective labor with transitional justice is a positive view of the agency of the disadvantaged subject. As an “environmentally friendly” practice, organic farming is considered a progressive way of re-engaging people with the nature. Nevertheless, this thesis presents a bit of the backstage scene, where the transition of organic farming is also motivated by the self-other distinction, structured between intimate politics of local relationships and soft surveillance of development. Ideally, the environmental aesthetics should be combined with ecological action and social justice, as suggested in an array of emotional ethnographies. What may be optimistically imagined in the argument is an anticipation of shared environmental appreciation. In the case of the Talampo farming transition, we find the potential need for emotional investment in the environment, at the same time however, with a new form of affective employment by the routine of development. In the following chapter on the subjectivity of the farmer and on environmental perception, the relationship of sustainable “development” and affective labor will be further discussed.

5.0 CHAPTER 5. LABOR, KNOWLEDGE, AND PROPERTY: CONTESTING AGRICULTURAL PROFESSIONALISM AND ENVIRONMENTAL IDENTITIES

Historical experiences have shaped the situated knowledge and embodied practices of different cultures, as demonstrated by the cases in Chapter 3 and Chapter 4. Derived from an understanding of local species and economic needs, farming directly shapes the livelihood of farmers. Knowledge is not only derived from the field but also transformed and detached as contestable property. Scientific agricultural knowledge in Taiwan, as discussed in Chapter 2, was introduced first during the Japanese colonial regime and later transformed as a consequence of US-initiated JCRR Reform. As the intersection of farming practice, three aspects—property, labor, and knowledge—are connected in rhizomatic relations as daily practice. A rhizomatic relationship, including gossiping, networking in unofficial means, and calculating through unbalanced reciprocal channels (e.g. Guanxi connection) etc., helps avoiding rigid regulations and creates new links that facilitate alternative relationships in everyday life (Deleuze and Guattari 1991, Yang 1994). Deleuze and Guattari point out that perhaps the most important characteristics of a rhizome is its multiple entryways. A rhizome is perpetually in construction or collapsing and perpetually prolonging itself, breaking off and starting up again (Deleuze and Guattari 1991:20). In this chapter, my discussion will be drawn from the interaction between agricultural specialists and farmers of both the Amis and Han Chinese communities. Cases from startup companies of bio-fuel production and organic certification processes for the indigenous

community will also be discussed in relation to contesting environmental identities by scaling or modeling in terms of the use of new biotechnologies.

This chapter targets to three goals throughout the comparison and contrast over two cases. First, it delineates a transitional view of the change of crops and environment in two communities: for Amis, from millet to rice and later to cash crops; for Han Chinese, from sugarcane to rice and to coarse grains in the dry farmlands. The transition on the one hand exemplifies how the local economy and knowledge was gradually overshadowed by external economic projects; on the other, it reveals the entanglement of the dynamics of local farming production with the state-market complex. Second, my inquiry goes to the interaction and discussion between farmers and agricultural specialists. In the case of Amis farmers, learning "standardized" procedures and negotiating ways in which organic certification is required was the major issue during the transition. Organic certification becomes a new way of seeing the political relationship between the Amis farmers and resourceful yet unfriendly Han farmer neighbors. The discussion of certification reveals also the problem and "divided" mindset of the certifying agents based on the assumption of organic "as belief" and "as practice" (or perhaps as another nature vs. nurture dichotomy). In the case of Han Chinese farmers, the discussion focuses on the symbolic view of the environment and the economic view of reciprocity as the understanding of how farmers' labor investment and historical memories are being connected with agronomists' evaluation of new types of technology and "intellectual" assets. The evaluation then turns to the perception of the environment and the calculation of skills into knowledge of how to manage in the neoliberal market. Third, the negotiating of biofuel crop investment and indigenous organic certification reflect how the scale and model are "intermediary processes"--or "boundary objects" as Star and Griesemer_(1988) put it--between

environmental empowerment and governmental regulation. On the one hand, the investment/inspection agents tried to use different farmlands for feasibility examinations; on the other, the narratives from local farmers revealed the blind spots of the design of large-scale projects. However, agronomic or industrial designs for the purpose of scaling up did not go back to connect with farmers' practice; rather, the action was carried to the lobbying of policies in order to detour farmers' accessibility. The understanding of labor, knowledge and property among farmers, entrepreneurs and scientists constitute the way agricultural innovation and new initiatives change how the environment is approached. My final discussion of this chapter calls into question the evaluation of labor and knowledge while Han and Amis farming has revealed different issues in food supply chain capitalism (Tsing 2009).

5.1 THE TECHNOLOGICAL MOMENTUM OF AGRICULTURE AND CONUNDRUM OF RURAL DEVELOPMENT

In the era of globalizing agricultural production and food distribution, agriculture has becomes projects and business as designed by the government. Due to regulations imposed by the WTO, local agricultural sectors are propelled to provide subsidies for farmers in order to raise incentives for farming activities. Both Han and Amis farmers face challenges of transforming the old ways of farming in reacting to economic demand and environmental limits. Researchers have long been asserting that the Green Revolution acts as a type of capitalist developmental project that draws farmers away from traditional working patterns, which results in a lack of consideration of the long-term impacts on local communities. By growing market-driven agricultural products and within a dependency on state-planned production, farmers turn

themselves from risk-avoiding cultivators into risk-favored laborers (Appadurai 1990, Escobar 1998, Scott 1985). The case in Taiwan reveals that such a transition is very common among farmers.

Before the planned-economy was initiated during the colonial period, the risks involved farm work were diluted via crop rotation and using slash-and-burn ashes or domestic animal composts as fertilizers. Since the Japanese implemented sugarcane plantations and labs for agricultural research, farmers have been involved within the state project of agricultural production instead of individual field management. With the means of regular documentation and monitoring of contract production via the colonial agenda, Japanese scientific institutions in Taiwan paved the road for the Green Revolution that was to come later. As Thomas Hughes (1994) discussed with his idea of “technological momentum,” a typical technological system goes through four phases from inception to maturity. In the first phase, the invention and development of a specific system are considered among an array of possibilities. In the second phase, technology is transferred from one region and society to another. The third phase is characterized by system growth, especially growth through overcoming critical problems or developing general patterns of uneven advancement. After such “reverse salient” have been defined and eliminated, a system enters the fourth phase, characterized by technological momentum: “A system with substantial momentum has mass, velocity, and direction” (Hughes 1994: 104). As the result of agricultural modernization processes via the Green Revolution, the state-rice complex characterized in East Asian countries has reached the momentum of technological stability. While the petrochemical agriculture is stabilized, the technological “achievement” effectively limits other agricultural practices in their germinal phases. Two examples of contemporary initiatives are the organic farming transition and set-aside-farming for

bioenergy. Although these two approaches are polemic in their beliefs and practices, structural stagnation against these changes remains the same in regard to how agro-infrastructures and political sectors provide easier access to the technology in favor of the current momentum.

Farmers are driven from self-employed risk-avoiding entities into displaceable labor, and thereafter become risk-favored actors in the agricultural institution. Economist Stephan Marglin used the transition from traditional farming patterns to so-called “conventional” patterns as an example of this. He points out that the degradation of farming communities along with the progress of modern agricultural practice and features of "rationalization" are projects that have degraded the peasant as a person as part and parcel of making him more prosperous: “He becomes an ancillary of the machinery of credit, supplies of hi-tech inputs, and official advice; in short, a cog in the agro-industrial machine" (Marglin 1996:195). As the cases from the Japanese colonial period in Taiwan demonstrate, farmers were driven by the imposed orientation in order to compete for resources and transform themselves into managerial minded workers. The conundrum of agricultural practice is that while the centrality of agriculture is overshadowed by industrial momentum, deskilling of environmentally-friendly practice resulted in the strict focus on efficiency and efficacy in farming works. The “improvements” in machinery and petrochemical materials rather intensifies the interest in efficiency so that farmers do not retain their conventionally creative and self-sustained ways of production. The mechanization and application of petro-chemical supplies are relieving the lack of production in the third world; agricultural productivity actually draws the population away from rural areas. Although Taiwan distances itself from the “label” of third world countries, rural activists recently called for an awareness of the agricultural production crisis and the dire situation of lack of substitutive farming population.

Another aspect of this agricultural change results in the transformed notion of property, especially in the differences between land property and intellectual property. The relationship between cultivating tenants and land titleholders discussed in Chapter 2 is recaptured in the format of intellectual property in the realm of agricultural biotechnology. Agricultural extension specialists, who used to provide cultivars for free as governmental benefits to farmers, are now charging fees and acting as gatekeepers for their services. How do we connect the appreciation and relationship of farmers' labor and researchers' innovation in the age of intellectual property? In the past, agricultural research extension workers were assigned as "volunteer" helpers for the farmers; cultivars from their labs were planted in the fields and the innovation was popularized by the state. Since Taiwan joined the World Trade Organization in 2000, the process of sharing agricultural intellectual property has become an issue for the researchers due to the regulation of TRIPS (trade-related intellectual property rights) in the WTO agreement. As a result, private companies with venture capital and connections to new markets gradually became as the brokers of newly innovated knowledge of biotechnology and are presented supported by the government (Lee Chung-shi 2003). Conventionally, with the metaphor of ownership relations, farmers were land titleholders who could lend their land and crop varieties to agronomists to do research, while agronomists and scientists were like tenants using local species for research purposes. The condition is quite reversed now, as farmers are requested to pay for new types of crossbred cultivars and to use the information from research extensions.

This chapter aims to delineate the conflicts that occurred while the transition of roles was adopted through the process of promoting biotechnological development in Taiwan. The idea of usufruct is assigned to companies for using the materials or works developed by agricultural research extensions. The gradual awareness of farmers' rights to their land and movements to

resist the governmental land grabbing for building scientific parks is antagonistic to the need for governmental funding and the research agenda of new crop species. The concept of usufruct is tied to the work in the case of loans from the government instead of benefiting from it as an agricultural agreement in the early years of rural reconstruction. Agriculture in Taiwan has had several transitions, with industrialization and commercial markets substituting for the communal based food supply chain production. When the government advocates scientific parks for factory building on the set aside farmlands, the effort of saving farmland from never-ending rural development also contests the agenda of the rural economy as targeting different supply chains. In these cases, the labor and property highlighted as the basis of production are transformed into knowledge of collective work and land as representation of rural attachment and ethos. In the following, I will first explore the transition of crop cultivation of the Amis in order to show the perception of labor and property and later compare this with the case of Han Chinese.

5.2 MILLET, RICE, AND CASH CROPS: TRANSITION OF COMMUNAL FARMING OF THE AMIS

For the Amis, the traditional hillside crop was predominantly millet. Millet was the major grain before Japanese colonial officials forced the Amis to cultivate paddy rice. Millet is a sacred plant for the Amis, and is put at the center of farming rituals among other crops along the seasonal cycle. It was the grain that goddess Nakao hid in her ears to save the Amis when the mythical devastating deluge destroyed crops on earth (Lo 2005). As a specific taboo required for millet growing in the Amis tradition, millet fields cannot come into contact with a male who has come back from fishing activities and cannot be touched with fishing nets, otherwise flood will

come to the growing millet and ruin the crop. Similarly, farming tools for millet cultivation cannot be put together with fishing nets, and the granary corner can only be reached by female members of the household (Huang 1997, Lee 2001). Millet may be considered the material resembling domestic life for the Amis, represented by females, in contrast to the unpredictable games and fish from the wild, represented by males. The following is the yearly ritual cycle of millet planting in Lidaw village of the northern Amis (see Table 3).

	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov
Season	<u>Kasi'nawan</u> (Cold season)			<u>Kafalawfawan</u> (Windy time)		<u>Kacidalan</u> (Dry and Sunny)			<u>Kabaliusan</u> (Typhoon)		<u>Kafalian</u> (Windy)	
Event	<u>Midiway</u>		<u>Mivalidas</u>		<u>Mivahvah</u>		<u>Mianan</u>	<u>Miladis</u>	<u>Miadop</u>		<u>Malalikid</u>	
Activity	Millet seeding		Weeding growing yams		Dispel pests and ghosts		Harvest millet and restore	Fishing ritual	Hunting		Harvest festival	Shamanic rituals

Table 3. Yearly Ritual Cycle of Northern Amis⁵⁰

Millet is sacred in Amis daily life, and the rituals related to millet cultivation are carefully carried out. In northern Amis communities, such as Lidaw near Hualien city, social activities are

50 A description of the rest of the yearly ritual can be found in my Master's Thesis (Lee 2001). After the sowing ritual "Midiwai", in early February, another ritual is carried out after the millet plants start to shoot. This ritual of symbolic weeding, called "Mivalidas," will be carried out when every household has done farming tool preparation. During the process of ritual weeding, villagers will perform to tight up the weeds into stacks, and mimicking the collective work in the field as the sport of "tug of war". The next farming ritual is called "Mivahvah" and takes place in April "Vahvah" is the sweeping tool made of leaves and stems of the areca tree. Leaf stems will be tightened up with betel nuts wrapped in them. Villagers will line up to follow after shamans who are throwing betel nuts and spreading rice wine into the air for ritual cleansing in order to chase away pests and hungry spirits. "Mivhavha" is an important ritual for environmental protection of the growing of millet; the ritual process identifies both pests (*ciruciru*) and hungry ghosts (*tagenawan*). Last, millets should be harvested around May, and the ritual for post-harvest storage is called "Mianan" ("Anan" is a ritual term for granary in Amis). When Mianan is carried out, the ancestors of the family will be summoned back to enjoy and bless the harvest, and to protect the harvest storage. Nowadays, Mianan is held in mid June when the rice crop is also harvested and husked for storage.

punctuated by the cultivation of millet. The initial ritual related to millet cultivation is called "Midiwai," which is to announce the millet-sowing season at every household. This takes place during the last week of December since the Japanese government standardized the calendar system. It is to announce the preparations for sowing millet and invites the ancestors of the households for treats (Furuno 1934[2000], Lee 2001). The activity is led by *Cikawasai*, the Amis shaman, and organized and followed by the elderly of the village who are divided into groups for the overnight event, which last until dawn.

Midiwai has several symbolic aspects. First, compared to other farming rituals, it is the ONLY ritual that is held indoors. This special arrangement resembles the awakening of millet from dormant status to active after the seeds are sowed. Furthermore, the procedure of Midiwai is held overnight, starting from the bereaved families with members who passed away during the year, and moves to the rest of the households in the village. It demonstrates the notion of bridging the regenerative force with the social realm for the bereaved family, in order to redress the stagnation of bereavement with collective efforts. Last and most intriguing is that, during the process of Midiwai chanting in the house, female members are standing in the front rows and holding pancakes made from rice and millet along with the shamans, while male villagers hold rice wine, singing simple rhythms in the back rows. Not coercively, old men reach out their hands and pretend to grab the private parts of old women during the process of chanting. The action seems very provocative, but the old females do not feel offended and jokingly fight back and walk around the house, playing tricks. The action is called "Mitsukyu." Amis elders explained to me that such action is just like weeding on the farmland, in order to provide better fertility to the land (Lee 2001: 35). As a form to regenerate symbolic force for millet growing, Midiwai is the initiation ritual for the millet all year round.

Millet plantation dropped dramatically due to the fact that Japanese officials asked the Amis to cultivate paddy rice for economic reasons. Millet growing was taken over by rice growing, while land reform was accompanied by the control of crop distribution and plantation transition. Millet continued to be grown on the slopes and in back yard for small-scale consumption, while colonial officials taught the Amis how to grow paddy rice and incorporate their production into the planned agriculture for the military agenda (Kuo 2008). In the Shiokuluan River area (the major river Amis villages are distributed along), riverbank and on alluvial plains, paddy rice fields and sugarcane plantations became the new landscape for the colonial production. On the hillside and valley area, however, crops are cultivated according to local choices, with yam (*vunga*), peanuts (*gudasin*), or ginger (*dayu*) as major choices. In the late 1930s, even the hillsides were transformed into paddy rice farms for the sake of increasing production. As a result, millet growing was replaced by paddy rice and sugarcane production, and the traditional millet rituals were either substituted for rice plantation or dismissed.

5.3 TRADITIONAL TERRITORY AND PROPERTY POLITICS

Talampo Amis are currently cultivating daylily flowers as the cash crop rather than self-sustained millet. It used to be a village with hillside farming and hunting for subsistence. As previously described, the transition of ritual timing resembles the shift of focus on which crops to cultivate. According to fagi Banai Kacaw (“fagi” is the title for a male elder), his father was the first to settle in the Loshan area, nowadays a Hakka farming village, around the late 1920s. The crops cultivated then were millet and yams; other crops such as ginger and hot peppers were planted for the purpose of trade. The Amis never planted green vegetables themselves since

these are considered naturally given from the land and obtained by gathering; this is why the Amis are termed “herbivore.” Around the early 1930s, Japanese colonial officials and local police relocated the Talampo Amis from Ciharaay to the current village site and asked them to change their hillside territories into ladder farms. They also forced the Talampo Amis to adopt rice cultivation. Fagi Banai was named “banai” because he was born at the time when his father started to plant sticky rice (*Oryza Indica*, in Amis “banai”) by the order of Japanese officials. The village was originally relocated at the lower platform of the current site, where the water supply was not consistent and quality was poor. Later they found a better platform with abundant spring water from the hilltop and built their huts for long time residence. Since then, Liushidan Mountain separates the two regions of Talampo Amis for living and farming. The farming territory in Ciharaay valley is located at the other side of Liushidan Mt. and the household registration is closer to the colonial administration on the lower hillside.

The elders still recall the day of planting paddy rice in the valley area, where they had to change the original land into cascade farms, find water for irrigation, harvest the rice, and then ship it to Han rice merchants. The farming valley area (where the “dark tribe” is located now) was still a distant region away from access by regular roads. The villagers would have to carry the rice harvest in baskets on their shoulders, and sometimes along with the sedan of Japanese officials, would walk along the riverbank from the valley to the main street where the rice mill was located. At the same time villagers would buy farming tools, clothing for school age children, liquor, and necessities with the payment for rice. “It was a long way to go; it usually took us about an hour and a half to finally arrive at the mill. Sometimes we would fall into the river and dampen the rice, and *Bailan* (Taiwanese) merchants would carp about our product. Elders didn’t like to do this, and we had to take over the task from our parents.” Fagi Banai

recalls of his experience as a teenager. To him, the negotiation was never an easy task, and he learned to speak Taiwanese more so than Mandarin in order to understand the deals among demanding merchants.

In the village, Amis' farmlands are located on the lower slopes; water resources are located somewhere uphill, with a small water reservoir on the top of the hill. According to the elders of the Talampo Amis, the whole village used to have a ritual when the cascade rice paddy farms were done with the seedlings in late February and August: villagers would drain the water from the reservoir for irrigation and catch the fish in the pond. The ritual served two purposes: It was for farmers to schedule the water supply from the reservoir when it was most needed after seedling the farm; it was also a group activity, as fishing became a reward for local "exchange-labor" groups after their hard work. Conventionally, this activity was led by *Cikawasai*. The ritual is still vividly remembered by the villagers: male villagers would dig a ditch to the pond and let water drained from it to farmland in the lower part of the village, while *Cikawasai* chanted by the pond at the same time. However, after the whole village converted to Christianity in 1956, the traditional rituals were considered against the new religious doctrine and villagers abandoned all activities related to shamanic practice. Even the shamans themselves were converted and advised that their practice had to be abandoned in order to be completely converted. Fagi Butal Biyun, another Talampo Amis elder, recalled the time when the villagers were debating whether they should abandon the practice of traditional ritual that had some farming benefits:

We had three *Cikawasai* left at the time of the village decision, and these elders also wanted to join the church in order to get some supplies. One of them was my great aunt and she wanted to quit *Cikawasai* in order rid herself of the difficult tasks. "Bokshi" (pastor in Japanese) introduced the medicine that cured her constant cold and stomachache, she then became a believer and so did our family. As for the millet

rituals, since we started to grow paddy rice, we learned that the field is dependent on fertilizers and pesticides if possible. In the past, we only used plant ashes and animal bones to provide more *icel* (“force”) for the ‘*orip* (“life”), now we have *saicelen* (nutrition) for our *banai* (sticky rice) and *dipus* (plain rice).”

First by the governmental power of the colonial state and followed by the conversion from traditional belief to Christianity, the transition of two social aspects resulted in a change of cultivation from millet and yam to rice in Talampo. However, paddy rice needs an abundant water supply, which is not easily maintained on hillside areas. Paddy rice, millet and yam were cultivated in cycles on the hill during the colonial period, followed by a shift to only rice and yams after the end of WWII.

In 1959, a devastating flood ruined a major farming region in the western Taiwan area. With the help of government loans and relief funds, roughly 8,000 people were resettled in the Hualien area and 500 in the Liushidan Mountain region. Some resettled Han villagers found the hill landscape and altitude similar to tea tree planting regions, and introduced tea saplings from the western side of Taiwan. The transplantation was not successful due to the lack of moisture. As an alternative, some Han farmers started to plant daylily when the Chinese tonic recipe calling for dried daylilies was prospering in the 1970s. Tea trees were gradually substituted with daylilies in the Liushidan Mountain area. Many Talampo Amis youngsters were away from home as contract laborers for better payment during the late 1970s and early 1980s; their farmlands were left unattended and missed the time to register for land titles. When the young Amis returned from contract labor work, they found out that the land titles had been registered to Han neighbors via the temporary administrative law of “Regional Developmental Outlines of Eastern Taiwan Province” (台灣省東部區域發展條例) in 1977.

5.3.1 *“Only Bailan Takes the Land as Their Own”*: Property, Labor, and Affective Relationship

For the Amis, a territory was firstly claimed for usufruct when someone started cultivating and built a hut nearby for tool storage. The occupancy would later be recognized publically while the community joined the collective labor exchange with other villagers (Huang 2003, Tsai 2009). For the Talampo Amis, the working huts in Ciharaay Valley were already the “proof” of territory cultivation, and the labor exchange agreement within the village provided the recognition of the ownership but their Han neighbors did not acknowledge this. As a result, Amis youngsters who left their homes for wage labor had to buy their own land back and also the daylily crops on top of the soil. Since daylilies were already planted, it was easier and economically sensible to learn to grow the cash crop rather than go back to millet or rice farming. Talampo Amis farmers were thereafter incorporated into the arena of cash crop farming in which Han farmers had determined the distribution of skills and wholesale connections. Choosing to plant daylilies along with Han farmers was not only an agricultural niche for local cooperation, but also a political assimilation with the livelihood of other Han residents when farmers with similar products share market risk and argue over rights on the same ground. However, the intricate process of the interaction goes along with the notion of rhizomatic relations between Amis and Han, which I will discuss more in the following paragraph.

The heyday of land registration in the Liushidan Mountain area was from 1977 to 1983, when the local government announced “legalization on the spot”⁵¹ for all farms and housing

⁵¹ Han farmers requested “legalization on the spot” since most of the hilltop land had already been transformed into tourist farms. Han farmers claimed that such new initiatives did not impede the conservation of water and soil like cash crop cultivation did.

previously considered illegal as they were built by migrant refugees from the west coast and veterans who had occupied the hilltop, making a living with tea or daylily plantation. According to the land registration policy, described in the governmental brochure “Review and Research on the Land Development of Eastern Taiwan” (台灣東部開發的研究與回顧 1975), the cultivated lands and farms could be claimed and remain in cultivation. However there were places that had been assigned for forest conservation under the policy, and Han farmers who knew the differences tricked Amis farmers into buying the land about to be claimed as conservation area. This left the Amis farmers disadvantaged due to information imbalances and ethnic cronyism.

Even when lands in the valley were bought back from the Han farmers, most of the Amis’ land tenure registration failed due to the state-installed forest conservation policy. Land usage and land tenure had been a major area of struggle and conflict between Talampo Amis and Han farmers. The means of acquisition through purchase also cause stratification among the Amis. The following table lists some Talampo farmers who have purchased their land or had it leased back to them and its current condition of usage (See Table 4).

Name/Age	Land size (Ha)	History of Transition	Land Registration	Current Usage
A’dop 45	6	Land in the valley was originally cultivated; occupied by Han farmers around 1973. Bought back in 1977 with 600,000 NTD.	Not yet formally registered. Forest Bureau holds the land title.	Organic daylily farming

Kacaw 42	4.5	2 ha land in the valley, inherited from his mother, and 2.5 ha in the valley transferred from his deceased cousin in 2004.	Both lands are list under Forest Bureau and to be transferred to indigenous land conservation.	Organic daylily farming
A-min 44	5	2 ha land on the hill was leased to Han farmers for 15 years. Returned to Amin after the collective purchase by local church for 200,000. Another 3 Ha land in the valley kept fallowed since Amin's father died, and returned to cultivation in 2002.	Land on the hill is leased to the church. Land in the valley is under the Forest Bureau (to be transferred).	Hill land is now the site of "Local Products Shop of Talampo" run by the church, and valley land is for organic farming.
Gawbil 39	7	2 ha of low hill land and 1 ha in the valley were originally from the family. 4 ha of land in the valley were "registered" under her name via transition from a Han farmer.	3 ha of land were under her brother's name, and 4 ha in the valley under her name (the only registered land in the valley).	2 ha low hill land for conventional daylily. 3 ha in valley for conventional farming and 2 for tentative organic farming.
Lisin Visai 71	2	The youngest sister of Kacaw's mother. 2 ha land in the valley was originally cultivated by her husband and later for peanut and yam growing. The Han farmer took it over in the 70s and the land was bought back with 300,000 NTD in 1981.	Registration was still under the Han farmer's name. However, the actual cadaster and entitlement is by Forest Bureau.	Devoted to organic daylily farming
Banai Fudin 73	3	1 ha in the low hill area was kept for ginger, yam, and daylily growing. 2 ha in the valley was used for paddy rice plantation, taken away by Han farmers, and bought back with 200,000 NTD (as half price).	1 ha in low hill is entitled under Fagi Banai; 2 ha in the valley are under the Forest Bureau.	1 ha in the valley for rotational plantation, 1 ha for organic daylilies. The land on the low hill is for conventional daylilies.

Table 4. Entitlement transition and current usage of Talampo farmland

When asked why the Amis "buy" their land back or why they don't mind that they are still farming with the Han Chinese despite the fact that they took over the land previously, the Talampo Amis usually reply, "We are still neighbors!" As Mayfair Yang discusses in her book on "Guanxi" (interpersonal relationships) and the gift economy in Chinese society, having

Guanxi is not just about mutual benefits, but also a way to transform the relationship into an extended networking as well as symbolic capital for later application (Yang 1988). Amis farmers surely incorporate the ideas of reciprocity in their daily interactions with the Han. However, unlike the Chinese Guanxi process, which redresses and compensates for hierarchical class differences in a socialist setting, Amis people perceive the power relations between them and the officials clearly and therefore are more flexible with the possible alliance they could have in their daily interaction. While facing unfamiliar Han people such as a young anthropologist like me, Talampo Amis shows a cautiously offensive attitude. I was first perplexed by their different attitudes toward me and other local Han farmers. Nevertheless, the difference was explained when I later found that some poorer Han farmers were employed by Amis farmers during the daylily picking seasons. The strategic relationship as such between Amis and Han Chinese shows selective intimacy as more of a rhizomatic relationship than the hierarchical one: there is no hierarchical recognition--or “arboreal” extensions as Deleuze and Guattari (1991) put it--but a symbolic take up of local politics. The new comers are covering over the old ones like the plants, but the old residents developed their relation with the land as well as reciprocal interactions with the environment just like rhizomes underground. Here I provide three cases to show the different concerns about the transition of land use and labor investment by A-min, Kacaw, and Gawbil, who “take back” the land at a certain moment and for particular reasons.

A-min is a core member of the Talampo working-unit who returned from city contract labor work back to his home community. His father is a Han Taiwanese and his mother a Talampo Amis. Living with his father throughout his adolescence and early adulthood instead of staying in the community, A-min developed a distant feeling to his fellow Amis cohort. A-min always wears a baseball hat with the words "Alcoholic Progressive Party" (燒酒進步黨) on

the front, mocking after the name of the oppositional "Democratic Progressive Party" (民主進步黨) of Taiwan and labeling himself a rebellious alcoholic, like other Amis in a tacit way. A Han farmer, Chun-An, leased the land from A-min's father in the early 80s. Chun-An didn't return the land, and it turned out he had already registered the land under his name. A-min threatened to kill Chun-An but there was nothing he could do to change the registration. At the same time, Chun-An seasonally paid the amount of "obligated" rent to support A-min's mother. In 2004, when the local church and the pastor were looking for a place to build a "vending and tourist site" to promote organic agricultural goods from their organic farms, they thought about A-min's land that was leased to Chun-An.



Figure 20. Amin standing in front of the working hut of his mother's name

After some negotiation, the land was purchased under the title of A-min for 300,000 NTD, which was provided by the Talampo church, and it was agreed to lease it to the Talampo Organic

Production and Cultural Association for 10 years. A-min didn't have to pay the money due to the help of the collective effort, and he can take the land back after 10 years of working on the organic team. Some Amis elders of the community didn't support the idea since they don't think the collective involvement in monetary transactions is a good "tradition" to have in such relationships. To them, land is where you invest time and labor; even though Chun-An registered unilaterally, he invested most of the labor and supported A-min's mother while A-min and his father were away (that's also partially why the fact that Chun-An registered the land under his name didn't cause the anguish and resentment toward him).

Only Bailan take land like their own property. How can you own something that is bigger than you? Unless someone wants to calculate how the *duas* (ancestors) were nourished by the land (which means you cannot pay back at all)!

Although the community benefited by obtaining the land and the building of the "Talampo Local Goods Booth," elders' questions about to whom this land belongs cannot be answered in a straightforward manner. A-min was away from the community for so long, and was not very accepting his Amis identity in the beginning, whereas Chun-An was a long-term neighbor to them and took care of the land and A-min's mother for a long time, even though he "took away" the land for his own "protection."

Kacaw's experience is much different from that of A-min. Growing up in the mountainous area with other villagers, Kacaw looked up to his brother, Sayan, to hunt, cultivate, and many various tasks to learn in the mountains. The two brothers were especially fond of hunting during the time of *Malabaliw* (exchange labor period). Kacaw's mother is a diligent woman so she herself worked the largest area in the valley available to her. Kacaw and his brother took care of the land of their mother since their father died early and there were no sisters

to inherit the land, as is the first priority traditionally. They cultivate the land with several different kinds of crops, but the long distance to the nearest market of the local Han township cannot sustain the farming. Kacaw decided to leave the village and worked as a construction laborer in Taipei country like most other Amis males.



Figure 21. Local Good and Tourist Center of Talampo with Watchtower on the hillside of Liuxhidan Mountain

In the fall of 2006, the construction of the “Local Goods and Tourist Center of Talampo” (達蘭埠展售中心, Figure 21) on A-min’s land was about to be finished, and working unit members went out to hunt in preparation for the celebration of the completion of the Visitor’s Center. Sayan was particularly frenetic about the idea and went up a steep mountain slope at night chasing game. When every hunter was back the next morning, Sayan had not yet returned to the meeting camp. They set out to return to the mountain area where hunting had taken place

the night before, and found Sayan's body under the cliff. Everyone in the village was devastated to learn this news, and did not dare to let his mother know. Kacaw, had finally had several days off, and was just on his way back to the village to participate in the celebration. Sayan's death was a huge blow to him, and he immediately decided to stay in the village for his mother and also to remember the time he and Sayan had together. Kacaw recalled his brother's devotion when we walked around the working hut he and Sayan had built in Ciharaay valley:

My 'lazy' brother Sayan was so beloved by the villagers. We built this hut together and he was even joking about how during the daylily harvest season, he could hear some joyful noises (between me and my wife) that made him an insomniac. He just ran too far away from our territory, and the *duas* (ancestors) cannot watch after him. Now it's my turn to watch the land for him.

Talampo Amis euphonize and joke about the death of a dear family member as "someone who was too lazy to eat his own meal," which is especially vivid after witnessing how fast Amis farmers eat meals after a long and tiring day. Kacaw joined the working unit for organic farming after Sayan's death, and became the leader of the unit while he was so devoted to farming work there. Although his land was not secretly occupied by Han farmers over the years, his land has been classified as "forest conservation area" and state property since 1983. The patrols of the Forest Bureau would post an "official announcement" on their hut threatening them to clean up the area or the "illegal" extension would be torn down. All the Talampo farmers got several "notes" like that throughout the years, and they constantly joked that the patrols of the Forest Bureau were so diligent that they could even count the number of wild hogs on Liushidan Mt.! Since their agricultural practice was successfully certified as organic by IMO in late 2008, Kacaw started to lead the Talampo farmers in their plea to the local officer of the Forest Bureau to promote legalizing their farmland under the recently passed "Act of Indigenous Rights." By

doing so, Kacaw transferred his affection and labor and that of his family into further action for land protection.



Figure 22. Amin and Kacaw picking rattan for working hut construction in the woods

The third case is about Gawbil. Although only in her early fifties, Gawbil currently has the largest amount of farmland in *Ciharaay* valley among the Talampo Amis. Gawbil's grandfather was a diligent *gadavu* (a term for a husband performing the matrilocal residential pattern as in Amis tradition) from Tavalun, another major Amis tribe in central Hualien. He cultivated about three hectares of land by himself over the years, and left it to his three children, including Gawbil's mother and her two brothers. Other than the original three hectares of land from Gawbil's father, they got four more hectares from their neighbors who didn't know their lands had been transferred and registered under Gawbil's name. The original landowners were furious when they returned to Talampo and found the lands they were hoping to depend on now

under Gawbil's name. However, as the legal status dictates, they can do nothing about it. Gawbil agreed to hire them as her tenant farmers after the "transition," and some of the original "landowners" agreed. There are, of course, some Talampo villagers suffered because of this and became miserable when compared to Gawbil's situation. Before the organic transition took over in Talampo, Gawbil was the only Amis farmer who could bargain with Han wholesalers on prices since she had a significant amount of farmland to guarantee the production. Fagi Banai, an old friend of Gawbil's father, comments on her behavior as "hungry for land like *Bailan*." While the comment about A-min's case refers to the property-oriented mindset of the Taiwanese farmer that "*only Bailan takes land as their own property*," Gawbil was said to be "acting like *Bailan*" and was very much resented by most of the Talampo villagers.

Talampo Amis can vividly recall their times in the valley before the infrastructure of roads or water pipelines went in. Even though access to the region of *Chiharaay* drastically changed because of the construction of the blacktop road, elders' affective responses to the landscape still pertain to the memories from the. How does organic farming practice reconnect the change of agricultural means with memories and embodied appreciation of the landscape? The following explanation and exploration delves into aspects of "indigenized" instructions for organic practice as well as the "naturalized" means of agronomic observation and skills. By adapting these practices, Talampo Amis combines the affective attachment toward their living environment with the progressive transition into the changes that are taking place.

5.4 “INDIGENOUS FARMERS JUST FOLLOW THE RULES”: BODY AND LANDSCAPE POLITICS OF CERTIFICATION

There was an occasion during my fieldwork when I was walking with several Han Chinese organic certifying representatives from a major organic food distributor, Tsu-Xin Organic Agriculture Foundation (慈心有機基金會), in the Talampo community for organic certificate inspection. They were impressed by the self-contained environment and naturally friendly practice of the farming in the valley. After the tour in the valley, they brought up several questions to Pastor Patal, the leader of the Talampo organic farm, regarding the final review of the certification process. A leading representative of the inspection team seemed enjoying the hospitality and the environment in the Chiharaay area. He sipped a cup of organic daylily tea and said to me privately,

You know, I have been inspecting numerous farms and communities for organic certification. I particularly like to visit indigenous communities and work with them. Not only because the environment is purer compared to Han Chinese orchards or farms near the cities, but also because of the attitude of indigenous farmers. These Amis just follow the rules and do what certification requires you to do. Unlike indigenous people, Han farmers argue back against the questions we have for them and provide lots of excuses. It's really difficult to deal with them. They are just EASY to deal with!

This anecdote reveals how indigenous labor is framed into “native skills” as natural approaches to conforming to standardized organic certification. Strategies adopted by farmers facilitate the changes in farming practices; nevertheless, the trend of adopting new crops and skills (either forced or voluntary) will also intertwine with the market. Talampo Amis farmers learned cash crop production strategies under colonial rule, at first paddy rice and then daylily cultivation. The need of cash crops is fluctuating on the consumer's market once the cultivation

is not guaranteed by the state with low-reward but steady contact. The entanglement with the capitalist market later transformed into several different directions: not only are new crops for cultivating are passively accepted, from paddy rice, bamboo, tea trees, and most recently to daylilies, but the means of systematically farming is also rigidly dictated by the market. In tribal settings, farming practice is scheduled by labor exchange reciprocity and the availability of land to work on. The skill of how to best take care of yams or millet is not the main concern of cultivation in the tribal setting. When the method of Meiji Agronomy (see Ch. 2) was introduced to Taiwan by the Japanese colonial administration, the documenting of recognizing the natural cycle, such as the timing for planting, preparing the soil, weeding and applying manure, became an important scheme of self-observation in promoting better production. By the end of WWII, pesticides and herbicides were becoming popular among Han farmers, advocated by the JCRR, but not to the indigenous farmers. It was after 1980 that pesticides and fertilizers were available for free market trading instead of controlled distribution by local farmers' associations, and indigenous farmers gradually adopted the petrochemical materials.

In her historical ethnography "A Time for Tea," Piya Chatterjee uses the body of female tea workers as an index for the notion of time and quality during tea picking in a colonial plantation. The rhythm of pruning the trees and plucking the tealeaves regulate a rationalized landscape, as well as transform the daily activities of female tea laborers. As Chatterjee points out, "historians have argued that industrialization transformed the customary rhythms of agrarian work. 'Task' times, upon which the seasonal harvests of farming depended, shifted into quite different temporal and spatial modalities" (Chatterjee 2001:176). The bodily movements of the tea workers, their toiling labor, and the calculated tea tree alignment on the landscape punctuate their lives into regulation through managerial processes. In this case, the post agrarian labor

assembly line begins to define the efficiency economies of factory work that underwrite the profit and orientation of mass production. Anna Tsing takes this a step further in discussing the symbolic tokens in supply chain capitalism. In her discussion, agriculture provides a type of supply chain from the rural to the urban, which in turn draws the symbolic token of class differences into the “strategic trope of management” (Tsing 2009: 151). The condition of post/colonial labor work transforms from the discipline of laborers' bodies to incorporate cultural difference as a trope/trophy of “diversity” in a globalized production chain. As a result, the actual cultural differences are conflated into multicultural representation: “Labor, nature, and capital are mobilized in fragmented but linked economic niches; thus, supply chain capitalism focuses our attention on questions of diversity within structures of power” (ibid: 149).

Even through having constant land conflicts with the Han Chinese neighbors and the state, Talampo Amis manage to live on their own land and keep the memories that reflect their environmental identity. The four major traditional territories were used differently: *Ciharaay* was used for hunting and rotational crop planting, and later for organic daylilies; *Cikaininan* was for the domestic animal raising as well as storing materials (for fuel or construction) harvested from Ciharaay valley; *Dafdaf* was for the low hill beans and conventional daylily growing; and *Talampo* was the household residential area. Cikaininan was also the place where elders rested after they hunted overnight in Ciharaay valley; nowadays the location is close to the uphill area where the Talampo Local Goods Shop is located. It is also on the way to the performance stage set by the Han farmers' association for a tourist attraction on Liushidan Mt.. The discipline of practice among the Talampo Amis shows a similar transition of the use of the body and daily procedures as a type of naturalized token for the daylily production industry of Liushidan Mt.. Every August during the busiest time for daylily farmers, the Talampo working-unit is requested

to perform on the stage daily as a main event for the “Dancing with Daylilies Festival.” Every daylily farmer knows that the busiest times in a year during are August and October when the daylily flowers bloom. Young Talampo farmers not only have to do their regular picking schedule, but also fulfill the request to perform in public.



Figure 23. “Dance with Daylilies Festival”

As an ethnographer, I performed with the group as well, not for the feeling of “being native,” but at the time there were some other young working-unit members who could not make it from Ciharaay valley and a certain number of performers were needed for the circle dance (Figure 23). The dance performance was scheduled between 4pm and 7pm every weekend, when there are supposedly the most tourists on the hill. The performance is only shown by male members because it should represent “the dance of braves.” Interestingly, unlike in most indigenous communities where females are usually those who show native hospitality and docility, in communities such as Talampo, where farming activities are most intense, males are

rather the representative for the labor ethos⁵². Talampo male farmers are thus busier than their female counterpart. It is difficult for them to refuse fulfilling such “duties” to the festival since Talampo actually sells about two-fifths of their total daylily production to the Han Chinese farmers' association, and lets them repackage the products as organic daylilies grown by Han farmers. If they don't participate, the farmers' association is very likely to give them a hard time during price negotiation, according to Pastor Patal, who has been threatened several times.

Another intriguing reflection on the gender and the body occurs at the time of picking daylily buds. I have described the skill of weeding in chapter 4: the force to pull out weeds should be continuous and steady, so that the roots of the weeds can be completely pulled out and not left underground. When fagi Butal taught me how to do it, he said it is like pulling the rattan entangled in the wood: you need to firmly hold the bunch first and gradually apply the force. If you force too fast, not only might your muscles get hurt, but the weeds cannot be completely pulled out. But picking the daylily buds is different. Daylily plants usually have 5 to 9 buds on a stem. The top buds are the first grown, and the rest grow from the side stems consecutively. The way to pluck the buds should follow the order of bud growing, taking down the buds that have sprouted no more than a day, but leaving the ones that are too little or have already bloomed. The action of plucking daylily buds is just the opposite of weeding: one has to hold a bit under the bottom of the bud, and pluck the stem quickly with a twist of the wrist. It is said that females are better at this action, just like their traditional way of nipping off the whole strain of millet grain, which is an action that males are forbidden to do. Although it is not ritually forbidden on daylily buds, and males pluck as quickly as females in the harvest season, Talampo females always tell me that the buds that are plucked by female can retain more fragrance in the buds,

52 Other examples are the Smagus of Atayal, where native forest guardian groups, and the Coastal guardian group at Atolan of Amis, are all organized by males, and become the representative cultural groups for their communities.

which are later further processed through male efforts at stirring and roasting them in the charcoal oven for 20 hours. Organic farming of daylilies has intensified the gendered differences between weeding, picking, and roasting, which in turn provides for new dynamics of the taste and flavor in roasted daylily buds.

I don't intend to essentialize the symbolic differences of gender ideology. Rather, my point is to bring in the gendered division of labor combined with aspects of the human-environmental relationship. The relation is established for every type of major cash crop: the Japanese paddy rice/sugarcane landscape shows another way in which the female is highlighted in domestic paddy rice labor while the male is transformed into contract labor for the state-owned sugarcane field. It is only when both genders have a contribution to the dynamics of the farming field, as well as their own meaning of agricultural practice, that a community can find its own “supply chain” pattern back--as Tsing (2009) indicated: from trope to management. I will go back to such a transition at the end of this chapter.

5.5 BEING ORGANIC AS THE “SECOND NATURE”: RHIZOMATIC AGENCY AND CONTEXTUALIZED INDIGENEITY

The imagination on indigenous farmers as organic is polarized: either taking organic lifestyle as the “second nature” to the indigenous people, or considering organic farming a complicated standardized procedure therefore not likely to happen among the illiterate indigenous farmers. However, indigenous organic agriculture is conflated within the dichotomy of nature vs. culture, and excludes the historical and political context, which has framed in the polarity. Michael Hathaway uses the idea of the “emergence of indigeneity” to refer to the public

space created by environmentally mindful activists and intellectuals in Yunnan, China. While it is politically sensitive to criticize the government of environmentally degrading policies, NGOs or activists claim environment and knowledge indigenously valid therefore a negotiable space rather than a set ethnic hierarchy (Hathaway 2010). Talampo's organic transition can be reflected as several types, including the indigenous space, its taking up of organic knowledge, and ethnically challenged certification process. Amateur agronomists, organic certifying agents, and NGO activists came to Talampo for the actualization of their own imagination about the indigenous lifestyle. However, the imagined indigeneity in between is essentialized without examining the political economy under all these categories, which results in the assumption of organic practice as an intrinsic lifestyle. How the lifestyle differentiated and produced as the "second nature" reveals a hidden agenda: for Han farmers, agricultural skills and technology are learned, which could be even better than the natural gift; for indigenous Amis, even though they are close to nature, it would not be as advanced as the learned knowledge that is "after nature."

Conventionally, petrochemicals are intensively applied on daylilies. Herbicides are chosen to kill short root systems, since daylilies are long root system plants they will survive⁵³. Petrochemicals and fertilizers are usually sold in Yuli, the Han residential township nearby Talampo. Daylilies seedlings are sold in corms with stems, and distributed by local horticultural and agricultural supply stores. Supply storeowners sell herbicides needed for planting daylilies, and teach the farmers how to "properly" use the chemicals. Not surprisingly, local storeowners become major knowledge sources for educating farmers about how to apply petro-chemicals. However, the shop owners only mentioned how much dosage should be applied and how soon farmers should return to purchase another round of the chemicals. They don't convey the means

⁵³ The most common herbicide used is the generic "glyphosate," produced by Evergreen Corp in Taiwan, which is the local agent of Monsanto Company of USA.

of self-protection while spraying the herbicides, nor do they provide alternatives to the petrochemical materials that intoxicate not only users but also the land. The Han farming community on the hill invited some agronomists from agricultural research extensions to give suggestions about their plants and gardens in 2006. What Han farmers had in mind was to change daylily's colors in order to make the tourist garden more attractive, and how to save water on the hilltop since water resources are limited and important. To the surprise of conventional farmers, the invited agronomists advised them not to overdose with herbicides to make the garden look "pretty," since the extermination of weeds and other plants on the hill reduces the availability of water; therefore, the underground water are constantly drying and the hill is easily eroded. However, only one Han farmer began to do the organic transition, while others still considered the conventional way more economic and manageable. Talampo has never invited to such new thought of environmental agronomy.

It was during typhoon's aftermath in 2002, as described in chapter 4, that Dr. Wu came into help. As a cancer survivor herself, Dr. Wu started to use her professional knowledge of organic farming and the networking in indigenous farming communities around 2003. A devoted Christian, she also felt more at ease with the community dynamics of the indigenous working teams. In this respect, what I have described as "affective labor" is not only the part that is performed by the Talampo farmers themselves, but also a self-actualization process of Dr. Wu because most colleagues focusing on lab-based and molecular level biotechnology marginalized her works. This is a parallel trope to the understanding of affective labor in both the specialists' and farmers' perspectives. Dr. Wu and the Talampo Amis constantly express their feeling of overcoming difficulties as the affectionate alliance to each other. While Dr. Wu is searching for recognition among her colleagues with an unconventional approach in a biotech research

institute, Talampo farmers also search for the proof and respect of being recognized as capable in going organic among their unfriendly neighbors. Affective labor turns the subjects to go against the odds and reveals possibilities that have been put away by dominant choices.

I use “rhizomatic agency” to reveal the mutually supportive interactions between Talampo farmers, the breast cancer surviving agronomist, cash crop daylilies, and other species in the Ciharaay valley. Echoing with the idea of “multispecies ethnography” (Kirksey and Helmreich 2010), the interaction among these “actants” consists of “an anthropology that is not just confined to the human but is concerned with the effects of our entanglements with other kinds of living selves” (ibid: 545). The transition is not just a human-centered organic movement, but also a gradual reorientation to the world of traditional knowledge, with a standardized certificate process. Organic certifiers as well as agronomists usually assume that indigenous farmers keep their traditional knowledge with them so that it is easier to be incorporated into organic practice when the transition is begun. Although the sensory and memorial features of the environment are very much retained and attached within the relationship of people and the dwelling on the land (Feld and Basso 1996, Ellen et al. 2000, Nazarea 2006, Sillitoe 1996), there is a cautious reminder about the political economy of local history which constitutes indigeneity from a practical and utilitarian viewpoint (Dove 2006, Escobar 1998). Rhizomatic agency, as contrast to arboreal structure, provides a relational perspective to actions that are composed by interconnected dimensions of motions (Deleuze and Guattari 1991: 25). For Han/majority farmers, the actions are dependent to the projects following the historical and political deployment; for indigenous farmers/amateur agronomists, their connection is possible only through the porous network from the mainstream structure.

Following this awareness, indigenous knowledge and practice is a part of the human-nature “worlding” (cf. Tsing 2008 “Alien vs ANT”, Zhan 2011) that goes with both the rediscovery of local life worlds and the appropriation of native to the production chain. Two examples of the application of the idea of “worlding” can be further discussed in Talampo’s farming that exemplify rhizomatic agency and relationships. First is the example of the localized certifying procedures. Aiming to fulfill the international organic certification inspection by the IMO group, Dr. Wu asked Talampo farmers to follow the procedures of the organic regulations, and placed the reminder post on the wall of their storage shelter in the Ciharaay valley. According to Dr. Wu, to memorize the regulations and following the SOPs (standard operating procedures) in the manual notes are critical to the success of becoming organically certified. Interestingly, as the photo of the SOP shows (See Figure 5-2), it is not a bilingual translation of every step—only those that are possibly confusing and may result in “perceptual” problems are listed. It also represents what Amis life in the valley is about:

“O nanao’en no mita to polon no tayal koninian”

Title: The regulations for everyday attention and review (for yourself)

“Akakapacefa a pateli to no siudoko a lasosidan”

Do not use clear lacquer in the working hut (the smell will cover dried daylilies).

“Ikamisian telien ko safun”

After using the bathroom, remember to wash your hands with soap.

“Tahepoen kiya mitodohan a tapangan no kilang”

Clean up tree root residue after you burn it (for warmth and land fertilization).

“Falahan kiya hata no papotal”

Remove the “flags” in front of the working huts (flags to chase mountainous animals away).

“hadimelen ko taliyuk no taloan nonamo”

Throw away any trash in the working area (take care of the environment).

“Onipakilacan no kapolongan no palagawwan ko sapifala a milosimet”

Do not recycle fertilizer bags to carry other materials (in the community association will provide large trash bags for you).

“Safun no sapisawsaw to kamay”

Do not use your hands to place daylilies into new bags after farm work

“Opolong no taloan a sasadimelen”

All the working huts need to be cleaned and remove unnecessary plastics

“Tastasan ato tahepoen kiya tatai’an no kalotalo’an mikinsa tonini”

Tear down temporary toilets around working huts (in order to keep wastes in control)

“Osapasilosi to kalolalosidan”

Keep all fire hydrants and facilities marked

“Micakay to lalosidan I Akaka pawan miala to 收據”

Do not forget to take “receipts” when you buy any farming/working necessity.

All points list above are regulations that are specifically marked in the Romanized Amis language although there are other points written in Chinese only. I asked Pastor Patal why only some were translated into Amis. She laughed and pointed out the fact that for each working hut, the old Amis farmers would arrange materials in their own way. Farmers, especially those who are working in remote sites and with limited resources, usually have their working huts arranged in a way that is “handy” and recycle bags, utensils, tools, and residues as much as they can. The customary habit of recycling is necessary and regular for farmers’ work, but for the purpose of a standardized examination, the handy recycling of materials and burning of tree trunks may result in some doubts about the “quality” of the organic farming and the possible consequences.

“We help our elders to preparing for the certification process. However, I am afraid of not being able to communicate well, so I translated some major issues that we observed, and asked the younger farmers and working units to cover the regular work for them. The translated regulations are like the format of ‘golden words’ that the elders used to learn from the Bible. This format is more familiar to them than the brochure!”

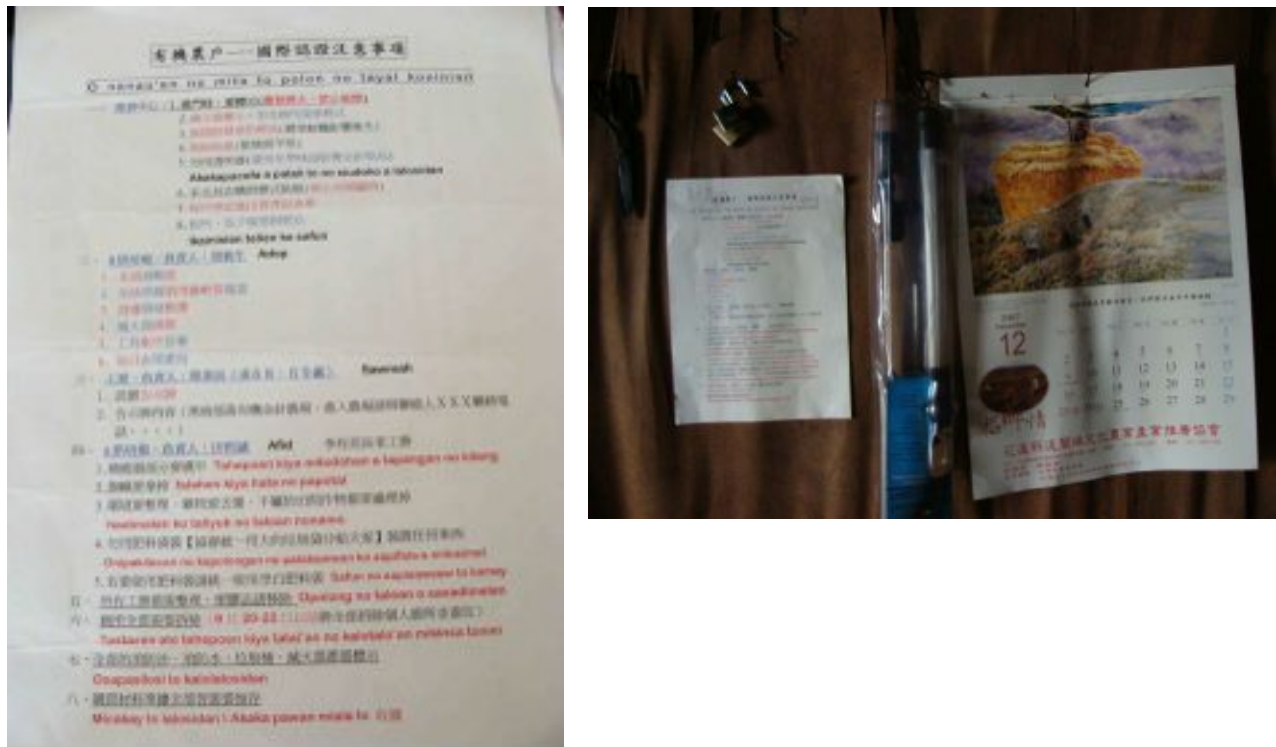


Figure 24. (Left) Organic Certifying Regulation in Amis language, and (Right) Regulation Sheet and Calendar Hanging on the wall of Working Hut

To Pastor Patal, the familiarity of daily instruction is more important for the elders than the rationale of how organic farming is done. Since old farmers were originally doing non-petrochemical farming, the vague idea about organic farming is to “*go back to the old ways.*” Anna Tsing uses “worlding” to describe “the process of making and claiming the world” (2008:4). Dipesh Chakrabarty criticizes that modernist mode of knowledge production “obliterates the plural ways of being human that are contained in the very different orientation of the world” (Chakrabarty 2000: 194). Following the criticism, Mei Zhan uses “worlding” as an alternative awareness to the modern, singular world: “worlding as a critical analytic: a mode of knowing and being that requires us to stand ready to step out of the world... to hold onto our

ability to imagine, engage, and even make other emergent world” (Zhan 2009: 24). However worlding is different from the world itself, since worlding includes social actions and framed contexts of historical background and future intention. Worlding therefore implicates the transitional engagement while actants are driven from one context to another.

Amis elders used to apply herbicides as conventional farming along with the traditional lifestyle in the Ciharaay valley, which is a mixture of industrial-dependent and bricolage convenience. The organic transition process has brought two “worldings” into an encounter. One is the traditional/conventional valley farming and life of the Amis, and the other is the organic standard procedure transformed into religious beliefs. While “standardized” organic certification requires not only the change from petro-chemicals dependence, it also requires the change of traditional resource deployment (such as refrain from using windfall tree trucks to make up fire and ash fertilizer near the “clear range” of organic products). Furthermore, the whole procedure is translated into another “worlding” of reciting sentences as religious regulation, which Amis elders have also learned and are used to as a daily ritual before going to bed.

Another effect of the rhizomatic agency in the organic transition of Talampo Amis is the “rediscovery” of wild vegetables after the “weeding” was no longer done with herbicides. Traditionally, Amis people usually refer themselves as “herbivores” in showing their fondness for and ability to find any type of wild vegetables for their consumption. While the introduction of cash crops and petrochemical materials changed the laboring landscape of Ciharaay valley, the seasonal harvest of wild veggie had disappeared due to the deterioration of biodiversity in the cultivating area. As Virginia Nazarea mentioned, memories of the taste of things and space are important for first generation IK (indigenous knowledge) to be transformed and communicated

for the recollection of second generation IK (2006: 322). For the Talampo Amis, to stop applying chemicals and herbicides was for the sake of conforming to the regulations for organic certification; however, the unintended consequence was the revival of wild vegetables in the valley region, and thereafter an alternative attraction to the tourists and food-scape for consumption other than the “designed” organic roasted daylily buds. Weeding labor now became partly a process of discovering wild vegetables, rather than eradicating all unidentifiable “grasses.” More than ten types of edible plants can be collected from Talampo Amis’ “wild vegetable fields”⁵⁴.

Since Talampo Amis changed their planting organic, backpacker tourists can visit Ciharaay following the rule of “working holidays.” Voluntary visitors can contribute their labor either for weeding or bud picking depending on the season, in exchange for free lodging in the “Dark Tribe” valley. Most of them, if not all, are impressed at the fact that they can collect so many types of vegetables in the fields without deliberately planting them. Amis youngsters also use the chance to learn, experience and observe with their elders about the distribution and usage of particular types of wild vegetables (for example, *sama’o* has almost substitutable for Wasabi, a great spice mixed with soy sauce to be accompanied with intestines of the flying squirrel). Some major wild vegetables (*sama’o*, *tatoken*, and *lokot*) are now constant components of stir-fry dishes at the Talampo Signature Goods Shop. While the organic transition and farming may seem to take away the subjectivity in the design due to certifying procedures, the unintended collection and the joy of encountering vegetables that haven’t been raised for years is a harvest

54 What Talampo Amis can usually collect are listed under their botanical categorization, and Amis names are bold and italic: Asteraceae: ***Sahma*** (field sowthistle), ***sama’o*** (rabbit milk weed), ***katao’ngay*** (sowthistle tassel flower), ***Showa*** (fireweed); Brassicaceae: ***hinalomay*** (common withlow), ***o’pao*** (small-leaved bittercress); Solanaceae: ***tatoken*** (black nightshade); Caryophyllaceae: ***kerá*** (goose startwart); Chenopodiaceae: ***o’sale*** (small goosefoot). If the daylilies are extended to the shade of birch trees, they can even find ***lokot*** (bird’s nest fern) and ***pako*** (another edible fern).

that agronomists cannot design through organic farming.



Figure 25. (Left) Wild pomegranate; (Right) Ganaw (mountain garlic) and Lokot (bird nest fern)

Back to my argument and approach in this part on the discourse of the organic transition, I use examples to demonstrate how “second nature” is contextualized into the imaginations of indigeneity. By applying the idea of multiple worlding, I propose that the “rhizomatic agency” of indigenous farmers provides appreciation and flexible transition between different contexts. It is through the unintended rediscovery of the wild vegetable world as well as the juxtaposition of standardized procedures with Amis farmers' habitus in the resource-limited valley, that we find the branch like that of genealogy is not applicable to the case of understanding how Amis farmers appropriate the work of the organic transition, and make it their own use of worlding. A rhizome is different from a root since it is not based on hierarchy and stratification, but

horizontal co-existence and proliferation from identical genetic making. Amis people didn't abandon their taste for wild vegetables, and they incorporate religious conversion within the conversion to organic procedures. It is similar to the way Talampo Amis cultivates taro and yam near their households for the sake of food security in the midst of a cash crop economy. There may not be an active process of changing the way of life in regard to rhizomatic agency; however, it is also critical for the outward transition to be successful with rhizomatic notions in connecting different modes of life. How is the worlding seen in Han farmers' situation since the skills are usually implanted as the progress of agricultural research extension sites? My discussion now turns to the change of technology as replanting seedlings in the Han Chinese case of bioenergy crops.

5.6 TRANSPLANTING THE SEEDLING: BROKERAGE AND BOUNDARY OF NEW SKILLS

Farmers interact with the environment and produce knowledge based on situated conditions they have dealt with. Farmers therefore developed stratification as they encounter capitals and technologies. The agricultural stratification does not translate directly from the outer social changes, but rather it depends on three criteria for the transition: the changing mode of production, the access to the means of production, and the ownership of different capital. These three criteria are the emblem of “individualization” through modernization in which the collective means and mode of production is transformed via supply chain capitalism. The project of bioenergy crop cultivation is an external change to the means of production, which transfers the roles of farmers and government from clientele patronage to outsourced brokerage.

When traditional agricultural projects cannot sustain farmers and the government within a beneficial supply chain, it calls in question about the tacit agreement between government's policies and farmers' interpretation of technological validity.

As discussed in Chapter 3, the farmers' interpretation of newly installed governmental projects often carry out the messages of historical memories, and thereafter the mentality of fighting/gambling with the policies. In the Han Chinese case of energy crop cultivation, community dynamics and lifestyle juxtaposition are not as critical for the successful transition of production mode. What was critical was rather the contestation between claimed professional knowledge and personal calculating application for land-based property. This in turns goes with the idea of land ethics and temporality in reciprocity. For a farmer depending on the contract cultivation project, the calculation is between loans owed to the clansmen and those to government agents: governmental loans are possible for only a limited period of time, and the relationship within the lineage is stretched and the loan will be paid back later. However, not every example can be managed as such, and some farmers become wealthier by catching up the timing to make his loan from the government valid first. The temporality in the technology thus is documented by the transition of contract farmers, such as Bun-zuan, who follow government projects closely. The change of relationship between agricultural extension professionals and farmers from patronage to brokerage is the main transition of knowledge and property in the Han Chinese case. Such a transition not only made the farmer a tenant to the knowledge and technology packaged by governmental projects, but also devalued versatile skills that they should keep as farmers for their environment. How so? It has some relation but how do farmers themselves see this transition? As described by Master Hon-Bo, all the promoted technology, from new rice cultivars to different fertilization methods to the new energy crop calculation, have

been the primer of property rather skills:

The new methods and projects just like the case of using transplanted seedling for the rice paddies instead of sprouting grains saved by farmers themselves. The seedling centers are efficient and you can predict the production better that way. However, it takes away farmers' autonomy and creates the division on what farmers retain as their own and what government wants to promote.



Figure 26. Master Hon-Bo on the Experiment Field of Sunflowers for Biofuel

The burgeoning of transplanting seedling centers took place in the early 1970s, with the help of JCRR as mentioned in Chapter 2. Centralized seedling farming results in new wealth and aggregation of capitals, but also results in the limitation of rice cultivar types. Right after the centers were established, the problem of rice blast diseases rose to a historical high due to the

limited varieties. The problematic result of centralized technology were similar in India, when communal wells were changed to electrically mobilized instead of cow-driven, and poor farmers were the ones who suffered since they didn't have the money to participate in the communal electricity fund (Appadurai 1990). In Taiwan since governmental help became the arbitrator rather than the mediator of knowledge, the brokerage of professionals "helps" to eliminate communal work of varieties that made rural production vital. In the old days, as rural villages farmed within a certain range of mutual cooperation, the production chain of agricultural products was kept within villages. Rice cultivators have their harvest neighbors who may raise cows for dung fertilizers, and also grinders who keep the husks for farmers to recycle back to the field. As described regarding the development of the Agricultural Research Institute in Chapter 3, farmers' knowledge is reproduced and evaluated in the setting of nurseries.

In the case of biofuel crop production, specialists from the Tainan agricultural research extension got the most complaints, both from farmers and oil extract contract companies. Farmers claimed that specialists didn't warn them about the possible pest issue, which resulted in major losses due to pests that were dormant underground. As for oil companies, governmental professionals became their de facto agents to inspect the rate of product of the farmers. The exchange of knowledge to the farmers for their support of the governmental project was a feature of the planned economy, which ties to the formation of supply chain production. Going back to Anna Tsing's (2009) critical examination of supply chain capitalism: she argues, it is the idea of "figuration of labor" that turns varieties of local supply into the "bigness of capital niche." The understanding of the figuration of labor and capital is basic to the imagination of the supply chain. Farmers become labor, and the ecology of the chain is different from the "project" of the capitalist since every part of the model is not necessarily grown by the anticipation of the

capitalist project.

The newly implanted application of cultivar, from soybeans and granola seeds to biodiesel, is the making “boundary object”. While Star and Griesemer proposed such idea to revise the concept of “translation” by Latour and Callon, they tries to mark the types of possible transition of technological understanding and learning via two aspects, one as boundary object and the other as interface and exchange standard (Star and Griesemer 1989: 389-408). As they explained and countered the notion of translation in their essay, “an indeterminate number of coherent sets of translations are possible, ...boundary objects therefore play a critical role in developing and maintaining coherence” (ibid 390). The idea of biofuel is attractive enough to be a boundary object, which means to be capable of penetrating different social worlds. Nevertheless, the production is asymmetrically acknowledged by the two sides of project participants. Farmers are asked to change the use of their land and beliefs on spiritual environment, which goes to a unilinear direction as governmental plan suggests. The participants from the other side of the biofuel as boundary object, on the other hand, could have multivalent imagination that connects to more possibilities in the social world. As a result, biofuel project retracts the credibility it promotes to the farmers, and forms a scaling standard based on the needs of industries. Biofuel as boundary object is then enclosed within agricultural and industrial realms respectively rather than opening up as mediator for each side.

5.7 TEMPORALITY AND OWNERSHIP: THE FLOW AND TRANSFORMATION OF KNOWLEDGE AS PROPERTY

As mentioned in the section on Amis farmers' labor as the perception of second nature,

and therefore a naturalized discourse about indigenous knowledge as given rather than going into the historical context of the power relationship, the notion of nature for indigenous communities is epitomized in holistic practice as the figure/actor/people and ground/context/nature converged into one. Nevertheless, in the sense of biotechnology, nature is to be challenged and further transformed as property. From the perspective of Actor Network Theory, “nature” is rescued, not by way of getting back to fetishized objects or humanized nature (Pfaffenberger 1992), but by seeing the regulation where environment is a part of the making of actants in networking. Reviewing the process of the energy crop plantation project, it did not trigger a massive and overwhelming problematic surge as the situations in other plantation countries. Rather, the project was like a paddle thrown into the pond, and conflict and complaints of the farmers and specialists, like ripples, were brought to the surface in the process. Nevertheless, the ripples were induced by the landscape of the agricultural agenda as well as historical institutions. As Philip McMichael comments about how the re-centering of agriculture is happening from two directions:

“From peasant mobilization to promote an ‘agrarian citizenship’, premised on land redistribution and co-operative forms of agro-ecology, and from corporate mobilization, articulated in the business vision of the ‘new agriculture’: led by private entrepreneurs in extensive value chains linking producers to consumers and including many entrepreneurial smallholders supported by their organizations.” (McMichael 2010: 613)

These two directions are not mutually exclusive, but dependent to each other in modernization trajectory. Organic and conventional farming are institutionalized into the mosaic practice of contemporary agriculture; on the other hand, entrepreneurial efforts on privatizing agricultural assets have started since the early colonial period. The two directions are connected by the use of knowledge as property via community dynamics. As the idea "benefit sharing" for

third-world states in order to get patent rights from the pool of traditional knowledge, Kristin Peterson points out that "the logic of state failure underlies how primary agency of the state has shifted to new policy-making formation often driven and administered by NGOs and the political and economic alliances that they make" (2004:81). The idea of transforming agricultural residues into bioenergy is not a new one; nevertheless, the installation of such an idea into policies for revitalizing idle farmland is a new way to connect the discourse of the trend of company-affiliated NGOs or foundations to such new ideas. Other than governmental professionals, there are NGOs that promote the idea of domestically made biofuel in order to connect to the green economy initiatives. However, the benefits are mostly calculated through the government's imagination on carbon saving or trading effect rather than cooperative initiatives for the farmers. After the first wave of wiping off the pests by farmers' own efforts using pesticides, they started to complain and planned to go back to their calculation of the whole project. As seasons and the timing of the seeding determine the growing of crops, it is not practical for the farmers to quit the experiment in the middle of it.

Then why biofuel initiatives were firstly calculated doable by the professionals and turned out to be failed? Was there anything other than the feasibility that farmers tried to get out of the failed bioenergy project? I consider that the "transition of property" was the main concern of the project itself. While the investment of labor is no longer a feature of agricultural reward in the era of mechanizing production, subsidized knowledge then becomes the symbolic capital farmers can turn to for further negotiation, such as subsidies for pest control efforts or irrigation priority right in a drought area. Agricultural knowledge, in these cases for Han people as separable property and for Amis people as inseparable from the land, is a type of property but the relationship and conditions of social networking for political recognition. My interrogation of

property goes to its temporality as the result of exchange and flow of responsibility, and seeing the alienable aspect of knowledge as opposed to accumulative land.

Using his ethnographic evidence from Melanesian studies, Joel Robbins focuses on the differences between “exchange” and “flow of possession” in social changes of the Urapmin people. Furthermore, after comparing Hobbs' notion of political recognition and presentation, Robbins asserts that property is as eco-centrally concerned with self-assertion in Hobbs' consideration but as gaining recognition from others in Hegel's idea. Robbins explains the notion of property via Hegel's definition:

Property is made up of three elements: possession, use, and alienation. If we take alienation to be the element of property that allows for exchange and use to be that which allows for consumption, then clearly it is these two elements of property that have received the most attention, both explicitly and implicitly (Robbins 2005: 180).

A further extension of the discussion is about the dynamics between possession and alienation. Possession is an outward result of self-creation in contrast to the personification of materials. As Robbins discussed in the Melanesian case from the reflection in Hegel's *Phenomenology of Spirit*, “the process of self-creation reaches the highest point when the person is able to exchange the object... In this respect, possession initiates the process of self-creation, while alienation is ‘the most complete actualization of ownership’ and of the selfhood it creates” (ibid: 182). The relationship between property and owner has laid out two directions of discussion: one on the meaning of ownership as personhood, and the other on the extended networking that property draws the owners in. A step further from the relationship of alienation and ownership is the similarity and connection between belief and property. What would different access to agricultural knowledge and beliefs result in the application of property in practice?

Comparing the Han and the Amis agricultural practice of use and alienation, there are interesting and revealing differences on property. Taking the practice of using pesticides among the Talampo Amis for example, it is considered rather as group ownership. In the past, using pesticides and herbicides was a group action under collective ownership. Exchange labor among households involved not only the schedule of cultivation, but also unification of action: everyone used herbicides at the same time therefore no one was excluded from the networking (weeds will grow back faster if someone applied herbicides unilaterally). With contemporary transition to organic farming, the Amis still does the labor exchange for weeding collectively, and the inalienable labor from family groups is attached to land ownership. Nevertheless, the temporality of non-alienated knowledge thus connected with traditions revitalized collective work, and provided the bedrock for activities other than organic farming such as wild veggie collection and hunting. For Han farmers, alienation is the ultimate form of ownership, which results in short rotation and temporality within the exchange between agricultural professionals and farmers. The consequences of alienated exchange are the short-lived validity of knowledge, as well as the forces of personal beliefs. When the spray of pesticides is not calculated into the cost of bioenergy crop planting or the technology of “transesterification” is not feasible for single household, the mere ownership of cultivation knowledge cannot be transformed into biofuel production; further social networking has to be developed for a possible accumulative means that solidifies boundary object into rules. Environmentally, the alienated knowledge as property also imposed symbolic perception on the endowment of nature. However, as previously shown in Chapter 3, the recognition of knowledge is based on an invest-reward exchange of gambling with the government as part of a totalizing framework. The extension of the environment of investment (or the belief on “probability”) is the notion of assemblage that combines local

production chains with international trading needs as a whole picture of political ecology. I turn to this discussion of assemblage in agricultural knowledge and property as the last section in this chapter.

5.8 POLITICAL ECOLOGY OF ASSEMBLED TECHNOLOGY AND RESOURCES

From the historical perspective, the idea of biofuel is not novel. Based on previous discussion, the imaginations of biofuel from different perspectives, such as the agricultural policy sector, planting farmers, agricultural specialists, as well as venture capital companies hunting for biotechnologies are all different. There are two points to be further elaborated. One is the political ecology of regional assemblage, and the other is the network of environmental governance. Take the example of bioethanol production in the US. There are two major areas of ethanol production, one is the corn ethanol of the Midwest, and the other is the Southern state with the sugarcane industry, which is connected to the Caribbean region. Gail Hollander (2008) uses changing geography in the Florida area to discuss how the “glades and swamps in the south are becoming sugarcane fields.” By using the concept of global assemblage from Aihwa Ong & Stephen Collier (2005), her discussion turns to the transformation of the cultural landscape and the connection of geographic affinity in order to formulate a cross-regional production area. Biofuels are full of controversy, and need political initiatives, technological transition and business alliances to be well managed. Sugar production transformed the landscape based on US foreign relationships in the Caribbean Bay area as well as the waning of sugar production in the Philippines; the assemblage would be then dependent on immigration laws regarding Cuban migrants who work in the glade area with both national security and developmental projects in

mind.

Taiwan has very weak political connections but powerful commercial activities regarding the global assemblage. The awkward decision to planting trees on the former sugarcane fields in order to prepare for carbon trading mechanisms rather than development of a sugar-based ethanol plant by Taisugar company is a perfect example of the rent-seeking mentality of Taiwan's agricultural industry. The "environmental subject" (Agrawal 2005) based on such an imagination is to present a land of "renewable possibility" and replicate the imagination in commercial feasibility terms regardless of the distance from the set-aside lands to the actual outcome of energy crop production.

The intersection of regional assemblage and business models creates what Aihwa Ong (2005) terms as "ecologies of expertise." These experts define their own networking, which is out of the framework of citizenship in nation-states but the "community" of potential commercial exchanges. As technologies are regionally inspired but globally assembled, the networking of expertise is created for transnational commerce and technology transition. The part of local inspiration of technology is especially related to agricultural biotechnology and raw material experiences. For example, the enzyme for sugar fermentation in Taiwan was best developed from the sugarcane industry and for pig waste since the Sugar Research Institute founded during the Japanese colonial period, which later combined with the largest pig raising industry in Taiwan. The enzymes for cellulosic fermentation that turns pentose or hexose into mixed alcohol for distillation were originally separated from the forage grass fermentation process and inspire researchers of the Livestock Research Institute. After the combination of the enzyme of high fermentation capacity and field observation of the high yield cultivars, especially fast-growing forage grasses, cellulosic ethanol production becomes part of the expertise networking for further

development. Such networking is reaching beyond the daily practice of agricultural specialists, and connecting to the work of lab scientists, entrepreneurs, and venture capitalists in the international trading scale (cf Appendix B for the Integrated Research Project of Cellulosic Biofuel Production).

In the field of agricultural biotechnology, there are two aspects involved in knowledge consolidated as property. One is what David Goodman (2003) called “natural-technical intermediaries,” for the bodily understanding of agricultural materials must be developed from close observation and trials of experiments. Another is the “agro-social network,” which changes the original application of certain materials or residues and creates another type of application. The latter usually transforms the regular understanding of conventional practice, and creates the connections for new innovation, such as “the feed for car” scale instead of “mill-driven” agricultural residue industry. In that case, we can also consider Bruno Latour’s notion to reject the absolute separation between nature and society, and turn our focus to the observation of the “blind spot of the exchange between materials and society” (Latour 2005: 20). However, the whole transition of market and technological networking is happening at the level of alienated ownership, which results in unattained negotiations for farmer communities with the holders of technological capital. As farmers are lured away by the surplus value of technology as commodity, the exchange values on physical labor and land property are stagnated in the setting of the farming community.

5.9 WHAT IS “NATURE” IN THE “COMMUNITY”? FROM LABOR TO KNOWLEDGE AND BACK AGAIN

Having demonstrated the scale shifting and operation in various ways, I want to conclude with two questions: First, what can local individuals learn from environmental resourcing in the introduction of global initiatives? Second, how do we define “community” in the study of new knowledge networking? As Kaushik Rajan put it, the biocapital in genomics reflects changes in two broader domains: “one is that life science is becoming information science, and the other is that biotechnology becomes the form of contemporary capitalism” (Rajan 2006:3). By launching the study on climate change and energy issues, anthropologists have started to discuss approaches toward sustainable technology and research on the technology producer’s end rather than the consumer’s end (Henning 2004, 2005, Hunsberger 2010). Furthermore, issues on globalization and the political economy of biotechnology (Goodman 1999b, 2003) are also emerging in the pool of discussion when biotechnology is not only a tool for modifying organic production but also a frame of thinking and governance.

Through the interviews and discussion with the farmers, however, the “resourced” thinking on a farm is gradually ceded by the “natural” thinking of what can be planted and what cannot. In the field for coarse grains to energy crops, the land is cultivated over a century in turning staple crops to cash crops, while the legendary or religious landscape viewing with specific spiritual power is also accounted for by local farmers (such as feng-shui space and legendary spots that allow the offspring of a household to prosper. The family deliberately left the space uncultivated in order to keep the spiritual layout of “nature”). For the farm-based community, “nature” is guarded by local interpretation, not in the sense of undeveloped virgin land, but as the way it was left to the offspring and intended to keep away from thinking as

“resources.” For lab-based experts, nature is to be framed outside of the controlled environment, but gradually integrated into the view of resources. Both parties are surrounded by actants in evaluating their bets that consist of non-human agents: farmers seeing the crops and specialists seeing in-vitro tissues or nursery plants. Farmers gear the decisions on gambling with government policies, while biotechnology is a gamble itself with neoliberal initiatives: projects or contracts directed toward environmental resources where three layers of expertise—farm-based, lab-focused, and regional-assembled ones—make the game. The game provides the scene how nature is re-imagined and interwoven while constructing a changing technoscape for a burgeoning scale.

Since different parties involve different aspects of a technology, how do we understand the “community” related to environmental initiatives? I argue that innovation and resistance from related agents will be incorporated into the dynamics of community formation. The community here is no longer an “imagined union” like Benedict Anderson (1991) proposed, but rather the entities which provide imagination and initiatives for transforming the awkward engagement into networking. Considering the three parties involved in global concepts from local perspectives: farmers are not only considered by their adaptation of technology, but also their resistance to imposed policies and market mechanism (Edelman 1999); technical specialists are not only interviewed about their information networking for research, but also the conjuration of assembled imagination (Ong and Collins 2005); and governments are not only analyzed for their strategies and connection to interest groups, but also the trajectory of governmentality and framing of natural resources (Agrawal 2005, West 2006).

“Nature,” as resource or as environment, has been defined differently by the communities that engaged for different reasons. I go back to the idea of supply chain by Anna Tsing (2009)

for this convolutional relationship. The way the supply chain works may shed light on how value is produced, how labor is transformed, and how the system is maintained. For the Talampo Amis, their agricultural practice was expanded from being a suppressed supplier in the chain, and gradually incorporated into a chain of value that supports its own consumers. They are no longer just farmers producing agricultural harvest, but natural hosts retaining their own “worlding” with the value that is unalienable from their labor and land as property. For the Han energy crop farmers, governmental brokerage gradually dissolved the self-sustained supply chain in the rural village, and alienated the knowledge into different models and professional advocacy.

What global connection has created is friction in the process of engendering different movements (Tsing 2005); nevertheless, friction is inevitable and even necessary defined by technological momentum. Scholars are led to at least two positions in considering the dynamics in friction and movement: for one, analyzing the mode of engagement in different stages to highlight details of technology/idea/capital distribution and negotiation; for another, challenging the universality derived from global connection that assumed movement is superior than friction. In the case of recent agricultural transformations to biofuel technology in Taiwan, neither can farmers fully access the newly developed technologies, nor does the agricultural administration actively engage with the potential transition to advanced utilization. The intermediary knowledge gap becomes manipulated by the newly involved venture capitalists and entrepreneurs, who have come to take the wave of biomass patenting and switched between raw materials for forage farming and feedstock for fuel demand. Furthermore, the investment of capital and technology contrives another barrier for the farmers, who are gradually identified as labors in the era of massive production. The subject of anthropological study on biofuel globalization is comprised by friction through engagement, scale-making toward universality,

and networks of implanted governance.

As a result, supply chain arranges and translates nature into compartmentalized environment, as well as physical labor under intellectual property. The labor of affective investment by the organic indigenous farmers is a mobilized difference within the supply chain. Although being organic farming in order to reject industrial production seems to be suppressed into supply chain again due to the conformism under standardized certification, the communal bond is revitalized via the reacquisition of ecological knowledge. On the other hand, the engagement of energy crop cultivation brought the communally recognized environment into supply chain that uses differences as its production feeds. It seems that community is substituted by supply chain in the contemporary setting, and that labor (derived from and consumed as bodily output) is subsumed under the category of knowledge production. Nevertheless, the dynamics between friction and movement just reminds us how production can never exhaust the work of local bodily outputs, and the supply chain is only possible by the active engagement and conviviality from community revitalization. As reminded by the approach of ecological anthropology to “read against the grain” (Walters et al. 2008), the model of supply chain and community revitalization is combined into the contemporary trend of labor and knowledge production. In the following and last chapter, I intend to discuss how subjectivity is formulated by the retrospective and prospective approaches in order to show possible space in between community and supply chain.

6.0 CH 6. CULTIVATING THE COMMONS: RURAL SUBJECTIVITY BETWEEN RETROSPECTIVE ACTIVISM AND PROSPECTIVE TECHNOLOGY

Back when we were in primary school, we walked along the large irrigation canal after school everyday. Among all the boys, younger ones were asked to carry all the clothing and book bags for the seniors, and other big boys would jump into the canal and let the flow of water float us all the way back to our village. It is a memory EVERY rural boy of Er-Lin Township has. Now, the water source been driven off for industrial usage, and we are forced to standup and protest! Where is the irrigation canal that I remember from my childhood? What can we pass down to our children if there is no water to grow anything like a rural village?

The Elegy of Irrigation Canals, by Wu Shen, Poet⁵⁵

These reminiscent accounts of a poet/activist were awoken from his memories at a young age by the distraught feelings with neighboring older farmers over massive changes of the agricultural landscape. The increasingly rapid change of the agricultural production section since the year of 2000, after Taiwan joined WTO, has induced laments and warning on different aspects of rural livelihood. Not only are farmers worried that their products may be opened up to vast competition with cheap imported products, but rural-attached citizens are concerned that the familiar sceneries of the rural environment will disappear, like the beautiful paddy fields and irrigation ditches that now live only in their childhood memories. The magnitude of neoliberal economy drives the transition of the application of lands. Though some projects are directed

⁵⁵ Wu Shen, “*The Elegy of Irrigation Canals*”, Liberty Times, Op-Ed. Aug. 8th, 2011.

toward agricultural revitalization, more farmlands are left uncultivated for the sake of agricultural trade. Moreover, those still under cultivation are facing problematic policies of governmental land acquisition and transformation into non-agricultural utilization. From 2008 to 2011, there have been at least thirty-two controversial cases of land acquisition by central or local governments in order to create space for building industrial/scientific parks, highways, trash-dumping sites, public stations, or administrative buildings⁵⁶. The prose cited at the beginning of this chapter was written by a famous poet, Wu Shen, and was recited at a public protest gathering on August 7th, 2011. It is a demonstration for “Saving Agricultural Canals” and public protest event organized by the Homemaker Union, the Taiwan Rural Front, the Green Citizen Association, and Taiwan Environmental Protection Union, among others. The demonstration was not only to show appreciation of the Chi-la-Pi Ditch (荊仔埤圳), the first official irrigation canals covering the great Chang-hua (彰化) area since the Japanese colonial period in 1907⁵⁷, but more importantly, to go against the tentative policy plan of redirecting the water resources of the canal in order to supply the future water consumption of the Taichung Scientific-Industrial Park.

⁵⁶ Wu Shen, “*The Elegy of Irrigation Canals*”, Liberty Times, Op-Ed. Aug. 8th, 2011.

⁵⁷ The first section of Chi-la-Pi Ditch was established by a local landlord for irrigation during the Qianlong period (1770s) of the Qing Dynasty.

6.1 LAND ETHICS: UNEARTHING INDUSTRIAL FORTUNE OR WEAVING RURAL SAFETY NET

Sitting by a set-aside farm field, “Governmental measurement of land makes me distraught,” an old farmer sitting by his set-aside farm in Xue-Jia area, smoking, and commented as so. Such a feeling is echoed by the farmers facing compulsory acquisition, “the constant measurement of land makes us live on tenterhooks all day” (土地丈量, 人心惶惶). Measuring of land base is a regular practice since the ruling under Qing dynasty; this being the case, why do farmers nowadays feel particularly inflicted nowadays? As farmers receive subsidies for set-aside farms, the measurement activity is a prelude to urbanization that could endow them with further reward for not cultivated their fields. However, for farmers who are still cultivating, especially those who have been engaged in farming for generations and take farmlands as ancestral heredity connected to their roots, the act of land measurement is a threatening sign for the possible change of their livelihood. That is, farmers could be driven away from their beloved farm work and their connection to the land as a result of urbanization and land appropriation by the government. The measurement activities are usually designed as regular governmental services by agricultural extension sectors in order to keep track of the ratio on water supply and land usage. It also covers yearly checking of agricultural resources that can be identified in a designated farming area. However, land measurement can also be initiated by government policy looking for possible sites as scientific-industrial parks, and taken as pre-construction preparation. The ambiguous action of measurement casts constant shadows on the everyday life of farmers who are cultivating without safety net, such as support from children working in the cities or alternative income resources from non-agricultural sectors.

Even not recognized by the government and people living in urban areas, however, rural areas are providing a social safety net for the “downward” mobilization of labor migrants. Moreover, there are insufficient social caretaking resources as the primary education system, and social welfare functions are not covering the needs of the “out classed” population who mostly withdraw from cities back to rural villages. Therefore farmers could also be lured by the government in exchange their land for a “developmental bet” to be industrial field. The land use and its related issues on the reciprocal relationship are also discussed in Ellen Oxfeld’s ethnography *Drinking Water but Remember the Source* (2010). In her discussion on villagers’ migration and the transition of a rural Hakka village in Southern Guangdong Province, land for traditional Chinese, particularly from the communist perspective, is taken collectively rather than privatized or up for trade. However, the economic boom and repatriation of overseas businessmen has resulted in divided opinions toward collective property as people disagree about which relatives are close and who has a say about property management. As shown in this case, the concept of property in rural areas is a source of derived connection to invisible obligations to ancestors and relatives. Contributions of land should not be rewarded to members in the lineage and workers living outside of the village, but rather the stewarded folks who stay in the village as they endure economic hardship and government ruling under various circumstances. This argument taken as such is based on the reward of the self-regulating tool for evaluating and balancing efforts and investments.

The two research cases in Taiwan are showing some significant comparison. As neoliberal ideology transformed Taiwanese society from a government planned agricultural production to land grabbing competition since the 1970s, land ethics turns inward as weaving social safety net and provides support for returning youngsters. In the case of Talampo,

collective land has shifted from being a utilitarian property to the basis of environmental protection; in the case of Xue-Jia, land usage connects reciprocal exchange based on governmental projects with moral value of proper designs in spiritual environment. Land and water are the only two resources that farmers can depend on: In Xue-Jia, the scarcity of water supply results in the dependency to the reciprocity of governmental projects; in Talampo, the land is subject to forest regulation by the state and further credited as a collective good to organic transition. The two cases had different historical background for the current condition. Nevertheless, land ethics in both cases turns from an economic view to the social supportive networking. Land ethics provides farmers in Xue-Jia the accounts on the resemblance of weather and government in the case of energy crop initiatives; it requires farmers in Talampo a collective unit on land usage in order to support the communal transition on organic farming. In sum, in contrast to the aspect of material reproduction in agricultural labor, land ethics is the “spiritual reproduction” for the labor that is to sustain rural communities.

6.2 ENVIRONMENTAL NGOS AND RISING AWARENESS OF AGRICULTURAL COMMONS

For the case of environmental protection and agricultural revitalization, the issue of property is not only about claiming ownership of productive land and fields, but the “interest of public commons” in relation to the impact and scale of economic consequences, the health and safety issues of the general public, and the common retrospective understanding of the past as well as the prospect of the future. One of the first acts of the Taiwanese environmental movement was to take action against pollution from petrochemical production in factories in the

Kaohsiung area in 1985. Consumers' health as a common right was first brought into attention by the report of consuming toxic rice barn oil in 1979. While these reports seem to predate the environmental movements, they surely aroused social impact and make connections with other issues on common interests. In the past 20 years, agricultural disputes within environmental issues, such as heavy metal contamination in cultivating fields and land grabbing plans by local governments, gradually concern by agricultural activists and consumers. Different from environmental protests that usually derived from the experiences of victims, the case of agricultural activism usually accompanied with projects of development or resources distribution.

As mentioned by James Smith in *Biofuels and the Globalization of Risk*, the development of biofuel initiatives is actually a result of the "sustained unsustainability of agriculture" (Smith 2010: 29) in most of the OECD countries. One reason is that the redirection of interests from the first level agricultural production to alternative production can also increase production and consumption in other industrial sectors. However, this kind of practice is not located in OECD countries themselves, but rather in lower income countries with draft laborers and cheap, most of times governmentally assigned, massive land for the biofuels production "experiment." In Taiwan, transnational land grabbing does not happen due to Taiwan's limited international political power and its position as an end user in global energy consumption. Nevertheless, we can also take the practice of setting of aside rural areas for the interest of urban gas consumers as a "localized" assemblage of the network of the biofuel chain. The case in Taiwan is, on the one hand, an under-scale practice of a biofuel initiative to revitalize the agricultural sector, and, on the other hand, a miniature version of biotechnological assemblage derived from local history. Even as some companies have caught on to the opportunity to invest capital into another aspect

of the industrial world, it has not been a successful case in the nexus of governmental efforts and corporate interests.

In the cases on agricultural revitalization and technological awareness, the two NGO groups engaged most in Taiwan are Homemakers' Union Cooperative and Taiwan Rural Front. Homemakers' Union Cooperative jumped into the actions mostly because it is the largest food safety awareness group. Launched in 1991, Homemakers' Union Cooperative (HUC) is the first and also the largest "shareholder" group of community supported agriculture. Initiated by a group of higher educated housewives who have been troubled by the issues of food additives and preservatives, they started the cooperative and contract purchase with small farmers in five counties in Taiwan⁵⁸. As a result, HUC has about 40,000 members and grown into the largest agricultural contract purchase group in Taiwan. There are also several public health and food science professionals in the HUC advisory board or committees, which provide HUC a solid background on providing agricultural product examination service as well as interaction activities with farmers on the issue of petrochemical residuals.

Taiwan Rural Front (TRF) is a relatively young NGO group in Taiwan. Founded in 2007, TRF was originally initiated by several PhD students on agricultural extension research, college students, and educated farmers/community activists when Taiwanese government announced a proposal of "Rural Rejuvenation Act". The proposed act planned to invest great amount of governmental budget on the development and construction of rural landscape, such as building concrete ditches and resting pavilions for farmers, but neglected the actual issue in rural areas such as aging of agricultural labor force, lack of balanced rural/urban development, and problematic production and marketing regulations on agricultural products. Due to the fact that

⁵⁸ Based on the information of "About Us" from Homemakers' Union website (http://www.hucc-coop.tw/about.asp?infor_no=0001), and interview with one of the board members, Mrs. Shu-te Huang.

some members in TRF are trained as lawyers and intensive cases of land grabbing for “scientific-industrial park” construction, TRF becomes the major advocate for farmers and tenants’ rights, which is mostly abandoned and squeezed by the government in its most recent strategy of “rural rejuvenation”. TRF and HUC work intensively with each other when the approach of organic farming and community organizing youngsters combined the benefits from each other.



Figure 27. Taiwan Rural Front and Homemaker’s Union Cooperative are two major NGOs on agricultural awareness and promotion. (Left) The demonstration on July 17th, 2010, in front of the Presidential Hall, initiated by TRF and HUC; (Right) a caricature regarding the land grabbing issue over farmland. The caption reads “Eat (computer) Chips, Not Rice”!

It is significant that the issues on environmental threats over agricultural production were not mostly concerned by NGOs that promote environmental awareness, such as Taiwan Environmental Protection Union (TEPU). As the earliest environmental initiative group, TEPU concerns major issues such as environmental pollution, the construction and evaluation of petrochemical industries, and most intensively, the abolition of nuclear power in Taiwan. Even

though all the issues are interconnected, TEPU goes regularly with lobbying strategy in the Legislation Yuan (Taiwan's Congress), rather than the mobilization of commoners or community organization work. The sense of agricultural landscape as common good was only aware by the public by the demonstration and press conferences hold by TRF and HUC. While agricultural environment is converged in the governmental developmental project and public concern on food safety and farmers' rights, it in turn attracts more participants and supporters from the citizens since the lobbying strategy. Farmers also find more empowered engagement with activities that promoted by TRF and HUC such as farmers' market and "Bow-to-land Festival" (彎腰生活節). While farmers are facing troubles and pressures from the discredit governmental contract projects and complicated organic certification process, farmers' market as the platform that initiated by TRF and HUC are very much welcomed by farmers who need the communication with consumers, or just send out the message about the threats they are facing on their farmland. Based on the involvement of different NGOs, my discussion turns to the networking efforts and the impact on agricultural common goods within my case studies.

6.3 FROM EMBODIED FLAVOR TO EMPOWERING TOURISM AS UNFULFILLED DESIRE

How are bodily senses important for organic farming transition? Not only because that farmer's body is most susceptible to the chemicals applied in conventional farming, but also due to the fact that both farmer' and consumers' sensorial reaction will be totally changed when a field is turned to organic farming. One regular component in the organic farming of indigenous communities is to sell the "exotic" flavor of indigenous goods. The Talampo Amis has learned

to sell pickled Amis wild vegetables (usually cabbage mixed with bamboo sprouts in peeled hot peppers), “homemade” liquor (“Lampolu” as the Amis like to call it, the liquor is filtered after fermentation from a special type of fruit known as mountain grapes), and liquor marinated peeled peppers that are crazed by tourists. In the Signature Good Shop of Talampo, indigenous flavor is coated by the imagination of natural and safe food. For tourists who just visited shortly over the weekend, the illustration of organic transitional procedure and duplicate of certificate hanging at the shop is not the attraction to them. They are attracted by the packaging of roasted daylily with traditional weaving baskets, or the flavor of daylily rib soup with peeled hot pepper that feels familiar and exotic at the same time. To Talampo famers, the great differences of organic daylily are not only having the fragrance of charcoal in the dried daylily product, but also the change of feeling in their work. Villagers taking turns to cook for each other, the weeding group joking during the work, and the smell of wind-thrown woods for fireplace during the night, all these are flavors of work that come back when organic farming replace the individualized chemical-dependent farming.

However, there is extra effort to transform the flavor missed by the farmers into the taste wanted by the customers. The strategy made to show the efforts of organic farmers, along with the imagination on the naturalized capability of being organic, is to promote the diligence of the indigenous farmers. Whereas the farmers have been learning the works of organic practice, they have to endure the deferral of satisfaction for the desired organic certified status. The diligent effort of the farmers is connected to the flavor of bittersweet working in the unwired “Dark Tribe” valley. Organic farming not only makes the plant stronger, but also embodies the affective identity of diligence and the branding of indigenous Amis farmers, as expressed by the

saying, “it turns fragrant buds turn into useless flower within no day, if we don’t work diligently.” (一日不辛勞，不日即成花, see Figure 28 of product packaging on this slogan).



Figure 28. Package of Talampo Organic Dried Daylilies

The slogan provides a window on seeing the embodied flavor into a neoliberal supply chain production. Even as organic farming, supply chain draws the efforts of heterogeneous actants into a smooth production line. Certifying agents, such as IMO and Tzu-Xin Foundation (慈心基金會), ask the organic farms to renew their certificate every three years. For Talampo farmers, the recognition of a organic certified status seems never coming, since they have to figure out enough fund to do another round of examination every three years. The deferring fulfillment of desire in exchange with the recognition of working ethics is the emblem of

neoliberal capitalist production (Muelubach 2011). Consumers, on the other hand, are also mobilized by the trick of being deferred on their fulfillment of desire on service (Zhang & Ong 2008). The flavor of farmers' working is translated via the channel of supply chain branding and made into the packaged taste for consumers.

Indigenous "lifestyle" is objectified and transmitted through the branding. Traditional tourism sees the exotic as a commodity to be consumed by visitors in locations far from their homes. According to Ulrich Beck (1995), risk-taking tourism has already shifted from a narrative based story plot to an experience-oriented exploration. In the Talampo community, the narratives of "homemade" and "indigenous" for tourists are glazed with the experiences that tourist can engage, such as hands-on weeding, picking of daylily buds, roasting flower buds overnight, and trekking along the creek into the valley to find the alternative path during the Japanese colonial period. Throughout different activities, Talampo farmers introduce the political controversies of land ownership as well as fighting on water resource between the Han and indigenous people, and provide the perspective from the other side of the tourists' regular lives. By these ways, the affective flavor of the Amis farmers themselves are transferred into activities that young backpackers can experience first-hand. The experiencing tourism organized by World Vision Taiwan and The Green Platform Foundation⁵⁹ is an empowering bridge, not only for outsiders to understand the political arena between indigenous and Han farmers, but also for Amis community members to engage the narratives about trajectories of the odds they have overcome.

⁵⁹ World Vision Taiwan is a Christian community empowering NGO that helps mostly the schooling kids and women to sustain their learning or production activities. The Green Platform Foundtaion is affiliated with Democratic Progressive Party in various activities that promote the self-sustaining projects in remote communities. Talampo joined their helping project from 2009 to 2011 through the connection of Taiwan Presbyterian Church.

The efforts of becoming organic in Talampo is seen by the empowering NGOs and provide help to the community, and affective engagement to the farming work is branded into commodity of package on labor and stories to be shared with tourists. However, it is not a perfect supply chain like Fordist model would predict. There were two middle age male farmers left the team of working unit due to the reason that they cannot fit into the role as tourist guide when Talampo attracts more “experience-oriented” tourists. They decide to go back to cities where they worked before coming back as the reaction to the type of work they cannot get used to. From the optimist perspective, their choice is also a flexible one in the process of change. However, the contingency within the expectation of getting community revitalization shows the discrepant subject making during the process. Tourists may not like the way living (even just temporarily) in the valley with no tap water and electricity, even though it is the desire of becoming “natural and indigenous” temporarily. Tourists’ fulfillment of living in indigenous life is not a long-term process, like Talampo farmers have gone through. In both cases, the embodied flavor and empowering tourism are taken into the production of unfulfilling desire, which has severed the connection in between by neoliberal capitalist doctrine.

6.4 CULTIVATING THE COMMONS: “WEEDS” AS WEAPONS OF THE WEAK

In the basis of agricultural work, the ability to differentiate weeds from crops is important and also most time-consuming work to do. In both cases I discussed here, I consider weeds are important symbols to think as well as cooperate with by the farmers. Why are weeds a good worth thinking about in my research? Taking a classic approach of symbolism, certain species or major plants such as trees have been used as the subjects of anthropological reflection based on

their positions in symbolic activities and ritual meaning (Douglas 1966, Tambiah 1969, Bloch 2005, Fernandez 2005). The meanings of animals or plants are converged into the collectiveness as representing cultural values or moral discourses. These collective representations are then used as doctrinal narratives of the cultures, and seeing other types of knowledge or representations marginal. Here I refer back to the philosophical counter metaphor provided by Deleuze and Guattari, the rhizome. The rhizome is different from the root. The root traces, it locates, it creates a grid, defines structure (like the symbolic anthropological approaches mentioned above). Instead, Deleuze and Guattari propose the imaginary of the “rhizome”. Above all, rhizomes are about multiplicity; they cannot be sited, cornered, controlled, or curbed. To them, the rhizome is “a map and not a tracing, they write, associating the trace with structure, determinacy, and genealogy (1991: 13). I use rhizomatic agency to explain how farmers create internal affiliations other than the hierarchical governmental project in the previous chapter.

Nevertheless, as in James Scott’s works on the resistance of peasants, collective representations and cultural norms may also be tactics of governance and ruling institution (Scott 1985). In this sense, weeds, which cannot be ruled or controlled as type of crops, can play a diverse role in the process of cultivation. Amis people often address themselves as “herbivore people.” Women collect wild vegetables (mostly considered weeds by agronomists) when they have leisure time after the household working; men depend on weeds to be diet sources during the time of hunting or wood collecting. Weeds used to be (and in several occasions still are) the sources of adapting diets when going out for field exploration and family visiting. However, conventional farming with herbicide usage has suppressed this memory and practice in the field. While the field has been redefined by the changes of types of crops and practices related with the land, collecting weeds/wild vegetables as supplementary food sources is still practiced only by

elders. In the standard case of organic farming, weeds become a headache and problem to farmers since they have to eliminate the weeds manually. Weeding is a painstaking, intensive and a time-consuming process. For open space organic farming (compared to greenhouse organic farming), weeding is constantly necessary, and since weeds can be resilient, farmers frequently need to revisit the places where they have weeded.

In Han Chinese, a proverb is commonly cited in daily life—if the weeds are not eradicated from the roots, the wings of spring will bring them back⁶⁰. Even though this saying comes from a poem of Tang Dynasty, it is often recited in order to show the mentality of making resolution. Han farmers are immersed in recognition of how resilient weeds can be, and the intuitive thing is to eradicate weeds in the field before it is too late. In the conventional scientific agronomy developed during the Green Revolution, weeds are targets to be “managed” in order to secure the survival of crops. When scientific management is applied to agricultural field, the usual practice is to eliminate weeds from regular crops in the field and save more nutrition in soil. Weeds are usually more resilient than selected crops, since they are “selected” by harsher natural environments than the crossbreed cultivars usually prepared for productivity. The conventional fight against weeds generally results in applying herbicides and high doses of phosphate fertilizers for crops right after weeding so they can outcompete weeds. Another more sophisticated treatment involves inserting herbicide resistant genes into plants as a transgenic treatment in order to develop undefeatable crops. Such treatment actually implants the hierarchical thinking into the unruly weeds, and tries to turn the weeds back under the control of “root-based” environmental thinking.

⁶⁰ As the Proverb goes in Chinese: 「斬草不除根，春風吹又生」

On a different perspective, weeds can be, like the subtitle here suggested, weapons of the weak. Why can weeds be weapons? Are weeds potential conflict species that embody the political sense of the transition to organic farming? This is not the case for cash crops like tobacco or tea with which contract farmers are part of the political discipline of production. Female tea laborers in India (Chatterjee 2001) and male sugarcane laborers in the Caribbean (Mintz 1986) are two classical examples of how the working body has become a political body. In my case studies, there are two perspectives seeing weeds fighting along the way of new agricultural initiatives with the underrepresented sides. For the indigenous Amis farmers, they have not been entirely displaced from labor exploitation, nor have they adapted the new and foreign organic certification, which requires self-documentation and tighten schedule all the time. The epistemology of saving the land and agriculture for nature has suggested continuity of the TEK (Traditional Ecological Knowledge) of the Amis who have found little outlet from the weeding process after turning to organic/traditional farming. To Amis farmers, weeds act as “trainers” to their daylily plants. Applying herbicides by conventional farming kills off weeds, but it also makes the daylily plants weak and incapable of growing sweet and long lasting buds. Phosphate fertilizer is also applied in order to make plants grow larger after applying herbicides.

The weapon against politicized body in capitalism for Amis farmers, however, is not just the ability of recognizing weeds as wild vegetables for their own consumption during the weeding activities. Weeds are also an embodiment of the relocated emotional landscape, and the constant arena of intimate politics between the Amis and the officials of the Forest Bureau. Weeding requires constant contact with the land and demands Amis villagers to stay in the valley. Even though poachers and Han farmers go pass the valley of the Amis in order to get mineral resources or water supply, Amis farmers have the opportunity to take back their own land and

work together based on collective work and need of group weeding. The need of working with weeds also teaches them to observe more of the growing condition of daylily, and provide detail records that certifying agency needs. Using weeds as their food, and unintentionally as weapon, Talampo farmers remember the location that has the best water supply near the valley, as well as the places that they used to find abundant vegetables for their celebration of food from the land even market was really bad. Contrast to the hierarchical notion of “thinking as root” that follows most of the standardized regulation, weeds is connected underground like rhizomes and resembled to the adaptability of Amis farmers as “localvore.”

For Han farmers, weeds have different meanings other than those studied by agronomists. Having weeds in one’s own field is a sign that he is not working hard enough. The mentality that weeds should be eliminated as soon as they grow serves as a proof to Taiwanese Han farmers’ competitive mindset. The competition comes from the early exploration of land cultivation, new skill learning in Japanese colonial period, and resource distribution under KMT government. The competition goes with gambling nonchalance over new technology since the connection may not be shown on the surface of competition, but from under table—like the growth of weeds from the side of heavy rock. For energy crop scientists and venture capital investors, the possibility of transforming weeds into biomass fuels without using fields engaged in food-production is an intriguing alternative, no matter through traditional methods of drying and compressing or biotechnological means to break weeds down into smaller pieces. The studies on cellulosic biomass and balancing the minimal management of the petrochemical supply has begun to rethink the role of weeds in farmlands, and has even taken weeds as the major target of research. Instead of eradicating them, agricultural waste residuals collected from farms can be applied for feedstock of energy conversion.

Then, how is weed symbolized as weapon in Han farmers' context? Following mostly governmental project and market mechanism, Han farmers have accessed agricultural knowledge and new skills through stratified governmental agents. As previously mentioned, however, the research on energy crops cultivation didn't count into the issues of pest control and weeds development, which resulted in a failed project. While the reversion of taking weeds rather than some cultivar as feedstock can be an alternative, Han farmers were constrained within lowest level in the hierarchical layer of developmental project. Clifford Geertz's classic study on colonial agricultural development of Java shows the involution of new input didn't create beneficial scaling of the paddy rice farms, but instead the involution of cultivating intensity between sugarcane fields and paddy rice farms as well as the condition of "shared poverty" (Geertz 1963). The promotion of knowledge on biofuels and alternative use of coarse grains for energy crops is a contemporary involution of agriculture. In contrast, the weeds grown on farmers' land cannot be transformed systematically as the "omnivorous" technology of cellulosic energy conversion. Han farmers, unlike Amis farmers who have flexible coexisting strategy with weeds, have been limited within the hierarchical framework of knowledge transition. The nonchalant reaction, either to the ever-changing policies or to applying chemicals for pest and weed control, is the self-aware marginal escape of the Han farmers in Xue-Jia. By collecting as much subsidies as they can, but recognizing no affiliation to new technologies, Han farmers' condition resembles the unruly weeds under the stratified and hierarchical world of agricultural involution.

6.5 A THREEFOLD RELATIONSHIP BETWEEN TECHNOLOGY AND COMMUNITY

My discussion on the two cases of agricultural revitalization in this dissertation has brought up the dynamics in between community and technology. In the concluding section, I apply three domains of analyses for comparing the two cases: The **reciprocal relationship within state policy, regional assemblages with virtualism, and biocapital as nexus between technology and property**. The two cases of agricultural practice reflect different meanings for these three domains. For projects connecting set-aside farms and research communities on biofuels, the policy negotiation regarding moral justification to the value of land and exchange agreement between farmers and government sector reveals deflated credit of reciprocity in between.

As reciprocity in farming community goes, farmers usually occupy the position that pays back to the benefits given from policy administration. While the policy maker and professionals provide the initiatives of making reciprocal interaction with their followers, farmers may not follow the agenda due to different consideration, such as manipulation of benefits, competition for resources, the discrepancy from information acquisition, or political disadvantages. The bargain between the policy promoter and followers like farmers has been making policy reciprocity an arena on community dynamics. For organic farming in Talampo community, the reciprocity is among indigenous organic farmers, the neighboring Han farmers and local farmers' association officials, as a form of intimate politics. In Talampo area, while major information about policies is channeled through the Han farmers, the Amis farmers learn necessary information via the Han farmers in a reciprocal way when buying agricultural materials or taking exchange labor from other villages. This reciprocity is constructed within the framework of

local politics and everyday interaction. Occupying the dominant side of a negative reciprocity, Han farmers and officials use the information as their advantage, such as wholesale bargains of daylily season and foreseeable changes in land policies. The Amis farmers in Talampo give their support to the members of the farmers' association election in return for agreements on wholesale and government subsidies information.

On the other hand, regional assemblages refer to the technology/power network of new agricultural specialists and empowering groups who transform the economic structure of the conventional farming. In the case of Talampo, amateur specialists and non-native volunteers are the promoter of the regional assemblage of organic skills. By differentiating lowland conventional herbicides daylily cultivation and organic valley daylily cultivation, and by combining traditional ecological knowledge (TEK) with land grabbing issues along with the transition from narrative tourism to "experienced" tourism, the amateur specialists and empowering NGOs provide a virtual connection that detour away from local political arena. Biocapital for the organic community goes to the highlighted awareness of the embodiment of farming practice and corporeal senses of the indigenous life style. What goes beyond the affective labor in organic transition is the awareness of species in the environment and the recognition of embodied accounts of changes, which connects economic revival with a belief system. In the following, I will discuss the three aspects of dynamics between technology and community as mentioned in the beginning of this section.

6.5.1 Affect and Biocapital: The Embodiment Neoliberal Labor

How do we understand the relationship between affect (as subjective engagement of particular experiences) and biocapital (as the nexus of human essence and capitalist society)?

Can we look at affect as the critical aspect linking property to the embodied notion of landscape, or shall we consider affect a precondition of understanding biocapital in different social arenas? I argue that the “projected alienation in social reproduction”, proposed by Steven Sangren (2000), could be applied in our understanding for this relationship. As a projected notion of traditional knowledge in agrarian practice, affect is attached to the deployment and consumption of technological initiatives, and biological properties, including the use of body affordance to practice certain activities. Unlike affective care-taking labor, agrarian laborers not only impose their affective evaluations and propositions in the process of farming; they are also dwellers in the agricultural landscapes created by their own physical activities. Biocapital, in this regard, is the projected property farmers have managed in their perception of landscape and appropriation of new skills. At the same time, embodied experiences as well as knowledge on local species, both of crops and other creatures in the agricultural environment, constitute a material base for affective projection of appreciation over the landscape as a whole. This is a process of projecting alienation from one’s own physical activities onto the realm of environmental knowledge. Such alienation reflects a realm of social reproduction within the framework of environmental ethics. According to Sangren’s concept of alienation, a social relationship is reproduced in the process of alienation in religious worship; therefore the archetypes of a culturally bonded relationship can be revealed by the icons of religious worship (ibid: 23). Taking the idea that culture is the “second nature” into play, we can argue that environmental practices may reflect certain types of cultural beliefs, and affective application and evaluation of biocapital is a social reproduction in the process of seeing embodied experiences and meaning as cultural value.

In my study, Talampo Amis practices organic farming in conducting ecological and friendly agrarian means within their environment. However, daylily is still a cash crop and Talampo Amis do not intend to change their established life supporting method and go back to “traditional” agricultural practice, such as cultivating millet or taro only. Instead, they are planning to go into mushroom and matsutake planting, which are “local goodies” promoted by the Han farmers’ association. While Han farmers who claim to grow mushrooms on basswood dust in the traditional way, they usually grow mushrooms over green manure packages by applying nutrition fluid instead of finding real wind-throw trunks. Talampo Amis farmers, on the other hand, try to grow mushrooms by storing them in the room kept for drying daylilies; they even also tried to find new types of mushrooms in the woods where they hunt for wild boars. Interestingly, this is a movement to incorporate the cash crop pattern instead of going back to traditional indigenous ways. I argue their environmental identity is developing based on assembled knowledge due to a mixture of subsistence strategies: not turning back to imagined tribal means, but incorporating constant stimuli from capitalist market. The market is driven by neoliberal labor force, which is counted by the assemblage of different functions within the supply chain production rather than the contact with environmental as a whole. Han farmers of energy crop cultivation, on the other hand, may control the particular part of their production in the supply chain. However, the performed indifference of affect reflects what they have engaged to manipulate is to follow the segregation of land and labor, rather than taking alternative from the rules of neoliberal game.

6.5.2 A Hidden Relationship in Property and Assembled Knowledge

As discussed in the beginning of this chapter, revitalization in the agricultural sector hinges on the dynamics between traditional and novel knowledge of using materials on the farm. Traditional notions of property, be it the lineage and collectively based territorial idea of the Amis, or the gambling exchange with the governmental policy of the Han, inevitably rejoin the concept of seeing property through the lens of assembled knowledge. What I mean by assembled knowledge is tracing the concepts of substantial property attached to land or certain types of cultural conducts. These cultural conducts are not only hybridized by the amalgamation of new ways of treating the land, but also are displayed and reiterated by the newly imposed initiatives on land in order to create networking and claim ownership of the new combination. These objectified cultural conducts are seen when Amis organic farmers display their newly learned bio-formula in their working huts, as well as when Han energy crop farmers show the written schedules of fertilization in order to reach the standards of governmental subsidies.

In anthropological discussion, property is a huge topic for connecting tribal reciprocity to the concept of labor reification in market setting. As Humphrey and Verdery have put in the discussion about property, it can be problematized on the assumption of scarcity, the boundary of an individual, and the idea of relations while thinking about property (Humphrey and Verdery 2004: 8). Nevertheless, the contested notions about whether property should be used toward the individualism and how can such idea substantially benefit the understanding of ownership vs. usage is also in question. What I want to extend for discussion here is the notion of property being connected with the use of newly incorporated knowledge and further transformed into a conceptual pavement to biocapital. While such kind of “capital” is used to provide an analogy of biological elements as materials of information science and historical construction of usage of

body parts (Rajan 2006: 12), my take up of the term goes closer with Rabinow (1996) in seeing the use of such term a framework of reasoning. The reasoning framework of biological practice and labor transform the ownership of property into identity, while my farming informants care more about how they are talked about than what types of technologies they are using. Here I quote what Marilyn Strathern has proposed for our understanding of property and knowledge:

“Property once held the place of the self-evident mystifying demonstration of human effort which had gone into the appropriation of nature... in the 20th century, ‘technology’ has become a new exemplar of human enterprise. Technology adds the further crucial element of “knowledge” for technology embodies not just the modification of natural realities, and the recognition of the human handiwork that has gone into them, but evidence of knowledge of how to do it.” (1999: 20)

For Strathern, the idea of knowledge is a type of property to be displayed, just like the masks people in Mt. Hagen make during their ceremonies. She continues to elaborate that, “Property rights hold up a mirror to the dazzle of creativity. For ‘intellectual property’ points simultaneously to an item or technique made available to knowledge, authorizing its use and circulation. And to the knowledge, on which claims are made, which has made it into an item or technique” (ibid, 22). The display of ownership of non-material property changes includes not only the object’s relationship with using knowledge, but also the mode of knowledge circulation as well. In the case of the biofuel knowledge network, seeing intellectual property of agricultural biotechnology is a displayed social relation among institutional researchers and company investor/shareholders. In the case of farmers, it reifies the social relationship between farmers and their land, as well as among farmers themselves, for such display of “intellectual property” is not mutually claimable.

If we think about the claim to layman farming skill, not as fancy as biotech, but as a type of knowledge, to be a form of display under the condition to go against the power domination by close-circled commercial and economic practice, we can connect the means of displaying “intellectual property” with the notion of reciprocity between farmers and the government. Simply put, in the traditional land-based tenure/tax relationship between tenants/farmer and the government, farmers can expect calculable return from the governmental purchase of agricultural products, therefore the property network is only limited within the land based circle within the community. However, as subsidizing policies are getting less and less substantial and projects proposed by the government being whimsical in different cultivation seasons, the anticipated value of the reciprocity between policy makers and farmers is inflated following production. Therefore, the property farmers need to hold on to is no longer sufficient with land property alone; they need to develop the claim on the “intellectual” part of the property in order to translate (using the classic concept of the Actor Network Theory) their interest into the ever changing projects that they used to depend on, or even further, detach from the old network and connect another production network (e.g. contract organic farming, tourist oriented rural gardens, or privatized energy crop experiments). This is the reason that I introduce the notion of knowledge assemblage that can be displayed as property. As in the organic farming case, knowledge assemblage can create extension of identity that reaches networks other than government officials, the claim on new bio-formula and alternative skills further empowers their differentiation from convention farming, and therefore property that can be collectively advance from environmental awareness. In the end, my comparison of the two cases is fully expanded in the last section of this chapter, on three aspects that goes under the recognition of changes of environmental identities.

6.6 WHAT'S IN THE COMPARISON: THREE ASPECTS OF ENVIRONMENTAL IDENTITIES

The comparison is between a biofuel energy crop project in a Han Chinese community and organic valley farming within an indigenous Amis community. They can be compared over property as knowledge, scaling vs. modeling transition, and the reaction to reciprocal policy inputs. However, the comparison may be a culturally constructed aspect of how to see similarities emerging as differences. As a cautious response to what I have demonstrated in historical and cultural differences, I hereby use three criteria to compare and contrast these two cases for the understanding of environmental identities.

6.6.1 Considering property and knowledge under state policies

For Han farmers, land ownership has been transformed since the long process of land reform policies. Due to the result as land fragmentation, agricultural specialists can easily rent a farm or cooperate with farmers for new experimentation on agricultural projects. However, it is also because of such fragmentation, local farmers cannot easily impose a massive transition due to various cultivars promoted by specialists. Newly articulated and market driven knowledge is welcomed by Han farmers, and has been a major driving force for past agricultural transitions in Taiwan since the Japanese colonial period. The successful scheduling of past projects has been disrupted by neoliberal market mechanisms, especially after joining the WTO, and the knowledge of agricultural skills facilitates the bifurcation of the agrarian arena: lay farmers are “capitally selected” to follow governmental projects or to turn to labor work, and the knowledge holders are driven to the land-detached experimental arena in the labs. Knowledge is a new type

of property for Han farmers, and this tends to differentiate the practices of farmers depending on their access to these resources.

For Amis farmers, land is held “for them” by the coercive force of state. In this case, the traditional territory is not fragmented by market or commercial production. Furthermore, it is easier to revert to communal-based cultivation, and economic conducts such as forest shade farming are taken up by local group and tacitly agreed upon by the government. Amis farmers’ “lack of proficiency” (and thereafter dependency) on the agronomy of Green Revolution also drives their transition away from disastrous conventional practice, before they accessed external help. As the historical consequences, organic agronomy is connected to the practice of traditional knowledge due to their deliberately distancing themselves from conventional agricultural practices, or the unintended consequences of lack of access. While new knowledge is learned and practiced as a communal asset, it is less likely that knowledge drives differentiation like Han farmers. On the contrary, the way that Amis farmers affectionately learn and experience the organic knowledge is combined with their reclaim of traditional territory. By doing so, the environmental perspective of the Amis can be driven toward the combination of land, traditional knowledge, and the affective outcome as a new identity.

6.6.2 Project of scaling vs. project of modeling for new technology

Applying agricultural projects onto scales or models are major means of implementing new design and practice, depending on the availability and conditions that allow changes. For energy crop cultivation in Han farming communities, policy is implemented based on studies by agricultural research extension and biotech lab specialists. As mentioned in the property section, farmers are converted for these projects based on a modeling method: while specialists have

done certain extensive experiments on farms in research institutes, the type of crops and calculation of yields are anticipated based on experiments, without testing on real farms. Furthermore, the effect of converting idle farms into energy crop farms can only be calculated with larger landmasses. A machine-based harvest team is specially designed for the installation of this project. However, the modeling calculates the agency of human-machine activities (from the Latourian perspective), such as labor input, fertilizers, irrigation, and harvest. The other agency, which is from non-human species, is not calculated. In this case, agronomists do not anticipate the huge pest issue (from the agency of the insects) after the revitalization of idle farms, neither do they foresee the problem of different growing times and the lower height of the soybeans imported from Australia and India, so that the harvest yield may be way less than expected. Scaling in energy crop projects is only applied when it comes to the situation of converting raw materials into mills in factories. Even the types of transforming technology, such as biodiesel or bioethanol, are considered with the scaling mindset. It is strange to learn why the state-owned Tai-sugar Company was not motivated by the bio-ethanol production policy at first glance, but makes sense to agronomists since using set-aside farms can only be least “intrusive” by planting/sowing soy beans instead of through massive transition to sugarcane plantations.

For organic farming, Amis farmers did not have a “model” think about based on the standardized agronomic perspective. The change to organic farming was driven by the devastation of conventional farming and the market, rather than learning a better model. However, the transition was done according to the trend of “small-scale” and gradually “scaling up.” Traditional knowledge of the environment, such as knowing about the types of weeds and plants that are good to keep and others that should be removed, was not implemented in the beginning of organic farming. Furthermore, there were some “nonbelievers” who did not want

to follow the strict rules and or leave the land for a season to change its quality. Talampo farmers actually still cultivate an area of “low hill daylilies” in the conventional way, meaning by applying pesticides and herbicides and selling the harvest to Han wholesalers for a cheaper price. Over the six years of transition, two “nonbelievers” started to join the organic team, and some even tried to rent their farms to Han farmers in the conventional area and focus on organic farming. During this gradual transition, the revenue was balanced and redistributed by the church as a communal center, which later encouraged the elders to teach younger farmers about traditional edible weeds and search for wind-throw wood to make organic materials. Along with the empowering nature of organic farming, the scale was also kept in mind in the development of tourism by attracting backpackers to have the “experiences of organic environment” rather than just being regular tourists. The scale-making process works with traditional knowledge, the incorporation of new skills for organic farming, and the transition from a product consuming community to an affect producing one.

6.6.3 Reciprocal relations between farmers and government/institutes

In a new project, historical memories with market articulated knowledge are major concerns for Han farmers, while attachment to the landscape and affectively situated knowledge is important to the Amis farmers. Derived from such historical settings and an understanding of imposed projects in agriculture, the relationship between farmers and governmental/empowering agencies can be considered as a “reciprocity relationship.” For Han farmers, the reciprocity with the government was put into effect starting with the forced planting of sugarcane during the Japanese period, and taken into the heyday of the postwar Chinese government, as agriculture was part of the militant plan under JCRR. However, in the transition of the role of agriculture,

especially under the rubric of WTO politics, the agricultural plans of the government have become looser. The shifting agreements of contract plantations with farmers reveal the “inflation” of the exchanges between farmers and the government. As a result, farmers have difficulty envisioning the outcome of governmental projects, as well as the applied interpretation of whimsical policy, such as with issues related to the climate. As Han farmers say, “We have to fight against the government and the weather.”

For Amis farmers, the neglect of their rights and lack of infrastructure intensifies dependence on empowering organizations, such as the local church and possible help from NGOs or interest groups. As with intended interests and reinforced imagination of indigeneity, the contents of the reciprocal relationship between Amis farmers and empowering organizations are more likely to be attached to environmental issues and communal development. The reciprocating affect is also derived from the traditional territory where the Amis has been attached for a longer period of time. Empowering agencies may take different forms than the government, but the bond of exchange is formed against the unfriendly local government and beguiling Han farmers nearby. On the other hand, the reciprocity of farming practice and economic reward is mediated by the affective engagement of helping professionals. This engagement is especially highlighted in my discussion, in that affective reflexivity and labor branding are derived from the appreciation of the effort exchange between empowering specialists and Amis farmers. The affective interaction between Amis farmers and the helping groups transform the exchange from that of organizational requirement to communal participation, previously separate tokens in the relationships between forest bureau patrols, Han farmers, or regular agronomists and Amis farmers. As a final comparison, different environmental identities are derived from different understandings and engagement with the

policy-related reciprocal exchange: For Han farmers, the market calculation and nonchalance to the policy game has resulted in the “inflated value” of policy exchange. For Amis farmers, their identity is intensified and attached more to communal solidarity through exchange with the differentiating the roles of resource politics, including empowering groups, the love of nature, and hard work.

6.7 CONCLUSION: BETWEEN RETROSPECTIVE SUBJECTIVITY AND PROSPECTIVE TECHNOLOGIES

In this dissertation research, I have shown that the contemporary agricultural projects in Taiwan are the result of transitional governmental policies and farmers’ experiences derived from historical institution and memories. Furthermore, three analytical and interconnected aspects, property, scale, and affect, are critical to the acceptance and understanding of how agricultural projects result in a new field of environmental identity. While affective labor is a type of reaction to the neoliberal economy in the indigenous transition to organic farming, consumers’ activities are constructed and channeled to enjoy the transient result of intensive labor, and the farmers defer their desire to obtain recognized organic certification status, or more precisely, defer self-satisfaction for the achievements of organic labor. Diligent work is an intangible element of the deferred recognition of skill, and therefore, some farmers are not self-recognized as being capable of doing “tourist guide” work and quit to pursue contract labor jobs back in the cities. As a result of competition and the mentality of being inspected, organic farming can be a part of governance under the neoliberal structure as well. As Tanya Luhmann put it, subjectivity “implies the emotional experiences of a political subject” (2005: 346). The

politics of subjectivity is a defining aspect in the understanding of emotions related to power struggles. Emotional experiences of political conditions, as internal and subjective aspects, are different from the culturally featured types of emotions that classic psychological anthropologists have studied. To the participants of rural revitalization, the memories of the past, just like the very example of remembering the lost irrigation canal in the beginning, drives retrospective affect to visceral acts to argue that power is inscribed on the bodies.

The fact that subjectivity is linked to political positioning and emotional reactions to the social entities in a cultural setting is intriguing. Farmers, or in their political identity as peasants, are constantly aware of such a condition. Nevertheless, what roles do these technologies and knowledge-of-being play in the overall identity politics arena? Classic studies about the subjectivity of peasants, such as those by Karl Polanyi, Eric Wolf, and James Scott, channel the understanding of rural survival into the historical trajectory of the transformation of labor forces, the class struggles, and resistance to governing authorities. Technology application, in this process, seems to be the alienating catalyst that drives farmers away from their own hometowns as in this juggernaut of modernity. The reverse of political liberation cannot be attained simply by allowing access to technology by rural populations or farming subjects. They are more aware of what sustainable quality of applying new technologies is in community-supported survival. Technology becomes a psychological device which goes with the transformation of subjective awareness of the political accessibility to resources, as well as the tool for breaking down traditional community organization in the sense of new political actions.

Based on the findings of this research, my discussion concludes by touching on three related issues: agrarian experiences as empowering politics, dynamics in rural nostalgia, and the embodied affects constituting the new environmental identity as “biosociality” (Rabinow 1996,

2008). First, agrarian experiences, especially those that combine environmental and sustainable initiatives, have become a new site of empowering politics. While Han farmers interpret their experiences with sugarcane plantations in order to understand the contemporary energy crop project, the combined feeling of fighting and gambling against the whimsical governmental projects as well as the unpredictable weather/fate reveal a political fact in the field. Government officials, agricultural research extension specialists, and company representatives are all players who have tried to define the arena according to their own agendas. Nevertheless, the reciprocal relationship between governmental agencies and farmers brings the engagement into a market mechanism. For agricultural research specialists, their political interests regarding the energy crop project are to create a model for comparing the cases of their forerunners and academic competitors. However, the modeling is not successfully applicable to set-aside farms due to the fact that these farms have been registered for subsidies but are actually used by local farmers for cultivating seasonal vegetables or crops. The modeling mindset is also taken by venture capital company representatives, who aspire to transplant the model of cellulosic biofuels in Taiwan. However, only finding the coordination is a matter of scaling in the heterogeneous networking rather than cloning and repetition.

To Amis farmers, in contrast to Han farmers, the land was not fragmented into small pieces for various plantation projects and private ownership until very recently. Furthermore, the “protectorate” monitoring of the indigenous land by the government also leaves the land of Amis behind in the realms of intensive agriculture and green revolution transformation. The organic farming of cash crop daylilies by the Amis is a cautious step away from market mechanisms and back to collective work in the community itself. The new political arena derived from the Talampo Amis’ organic farming is not only a reversion of submissive position in local politics,

but also a chance to reengage with the traditional hunting track, collecting of wind-thrown woods, and promoting the lifestyle in the “dark tribe” as the unintended consequence of a tourist destination known for its lack of infrastructure. Empowering NGOs and local organic certificate agencies take on different aspects of being “indigenous” along with organic farming, and add up multiple layers of the intimate politics of the indigeneity of the Amis. Controlled scaling of organic farming by self-regulation via the local church and production association provides a gradual transition of environmental identity, instead of a sudden possibly fatal switch to modeling.

Second, the nostalgia and reminiscence toward rural landscapes and indigenous knowledge have resembled the sentiments of understanding vanishing elements and the discourses constructed thereafter (Ivy 1995). The lost tradition and the rural that has created differentiating identities for citizens who visited them. As mentioned in the very beginning of this chapter, the memories about the past drive all the works of farmers’ rights and empowering NGOs to engage the forefront of agrarian movement. Rural landscape defines the meaning and significance of people who have anchored their lived experiences and memories. The experiences in rural areas contrast to the ones in urban areas and reflect the appreciation derived from the differences of certain embodied memories only possible in rural surroundings. The nostalgic feeling toward the rural lifestyle is a retrospective yearning and attachment with the procedures and materials lost before reaching the current moment of personal achievement. Moreover, contemporary meaning can also be gleaned from the dynamic process of reflecting the differences between the past and the present in one’s own personal history and living environment. However, in the cases of multi-layer biofuel production and organic farming turning into indigenous tourism, the rural is also painted with a futuristic imagination. While

skills and knowledge in the two cases are going in different directions, the images of energy crop farmers and organic farmers are surely different from conventional ones, and grant them symbolic capital for different projects. Though the Han community project failed, it draws much attention to the issue of food security and the possible revitalizing of idle farms from set-aside policies hereafter. Talampo Amis, with their successful organic transition and insistence on refusing modern infrastructure in the valley, are following an alternative economy in their own community as well as attracting new backpackers for a taste of labor rather than product consumption. The “new” rural is now not a contrast to the urban lifestyle anymore, but it is a complementary inspiration, and a tryout area for new technologies in a field that is not available in urban areas.

Expanded from the second issue, I argue the third feature in the comparison of contemporary agricultural revitalization lies in the idea of embodied commons as biosociality. It refers to the notion that the public commons are attached to individual experiences through physical and psychological engagement with agricultural activities or thematic events as mentioned in the very beginning of this chapter. While in the past, urban and rural experiences were separated into different worlds; the new agricultural projects, especially the ones promoting organic farming and scientific tourism, bridge the gap between farmers and consumers and therefore provide a middle ground for a corporeally attached public commons. Furthermore, I argue, this embodied engagement with public commons will turn to a form of biocapital by resisting the neoliberal logic of land and environmental privatization. The definition of the use and practice of technology is incorporated into the definition of an individual and displayed as attachment to property. Environmental awareness within agrarian action and agricultural knowledge helps to appreciate the new projects, while rural subjectivity is solidified via the

dynamics of retrospective and prospective engagement within them. Such recognition can be reflected in the public movement and action toward agricultural commons as a new dimension of rural lifestyles and environmental identities.

APPENDIX A

NUMBER OF AGRICULTURAL VOCATIONAL SCHOOLS AND ENROLLMENT

	Agricultural Vocational Schools			
	Number of Schools	Taiwanese	Japanese	Total enrollment
1919	1	61	-	61
1920	1	115	-	115
1921	1	177	-	177
1922	1	198	-	198
1923	1	231	-	231
1924	1	224	3	227
1925	1	223	7	230
1926	2	276	48	324
1927	2	360	74	434
1928	3	480	121	601
1929	3	680	165	845
1930	3	882	212	1095
1931	3	962	226	1189
1932	3	1025	244	1270
1933	3	1031	252	1284
1934	3	979	276	1256
1935	3	966	273	1239
1936	3	979	279	1276

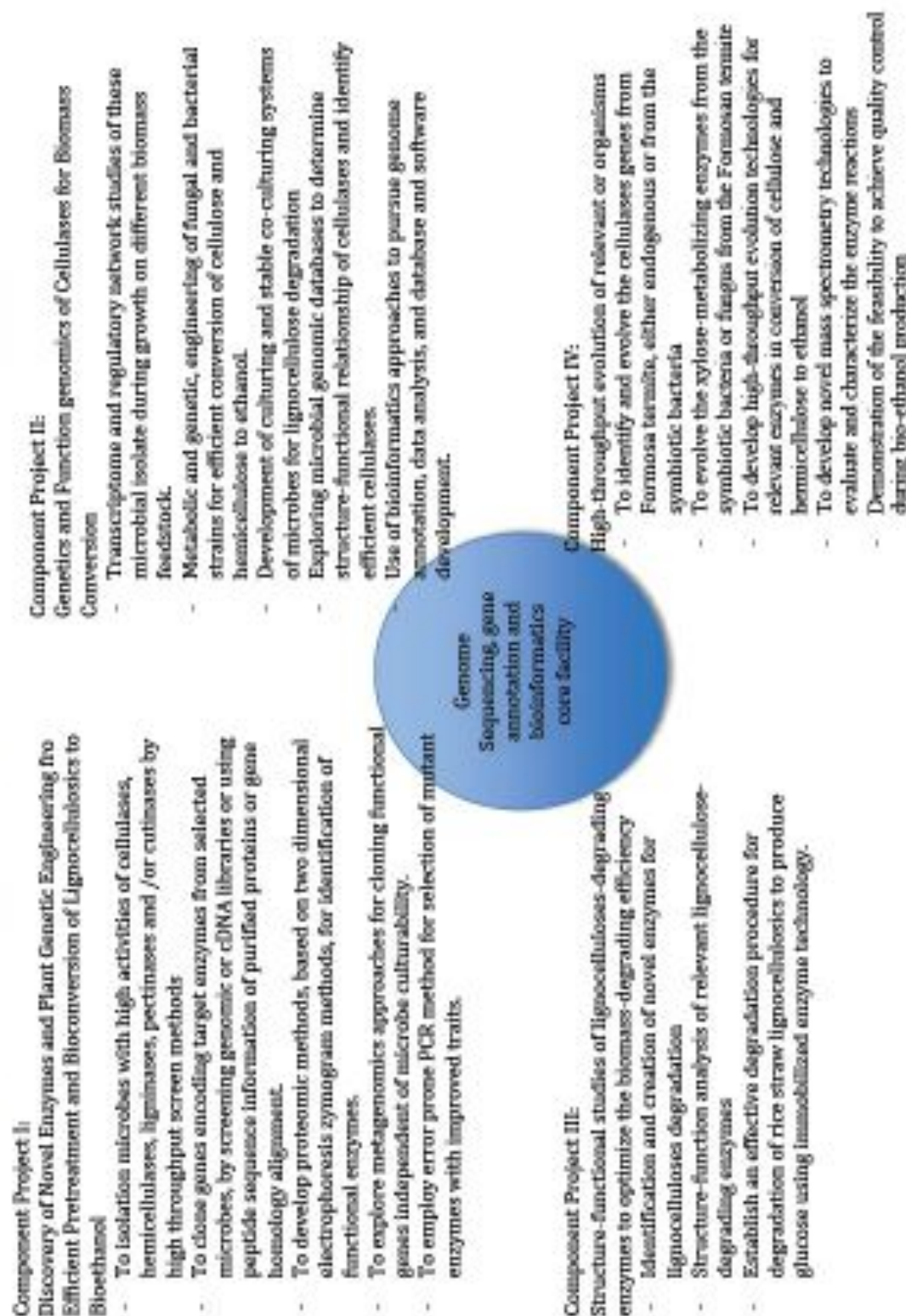
1937	4	1043	373	1415
1938	5	1156	472	1628
1939	6	1409	557	1966
1940	6	1667	640	2307
1941	7	1854	675	2535
1942	7	2236	692	2928
1943	8	3044	901	3951
1944	9	3504	960	4465

Table 5. Number of Agricultural Vocational Schools and Enrollment in Japanese Colonial Period
(Information gathered from “Taiwan Province Administrative Statistics,” 1946: 1224-1226)

APPENDIX B

INTEGRATED RESEARCH PROJECT OF CELLULOSIC BIOFUEL PRODUCTION,

ACADEMIA SINICA



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